

(2)
INSTRUCTIONS

FOR

Planting and Managing

H O P S,

And for RAISING

HOP - POLES.

Drawn up and Published by Order of
the DUBLIN SOCIETY.

Dublin. - Royal Dublin Society

L O N D O N;

Printed for D. BROWNE, at the *Black Swan*,
without *Temple-Bar*.

M. DCC. XXXIII.

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Painting and Engraving

H. P. S.



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BY way of *Introduction* I shall give some Historical Account of the Progress which hath been made in the Planting of Hops; next, shew the Advantages which may arise by such Plantations; and then, obviate some Objections which have been made, and which have hitherto discouraged the Propagating of Hops among us.

Before the Use of Hops was discover'd, *Ale-Hoof*, *Worm-wood*, *Broom*, *Hore-Hound*, *Gentian*, and many other bitter Plants, were generally made use of for preserving Malt-Liquors; but they either wanted Strength to make Liquors keep, or made them very disagreeable to the Taste, or both: but when the Virtues of Hops were found out, that they gave Strength and Flavour to Malt-Liquors, and were able to make them keep for as long a time as was desir'd, and cou'd be rais'd in great Plenty, they soon came in to general Use, and all the rest were laid aside.

Hop-Plants were first brought from *Flanders* into *England* in 1524, in the 15th Year of the Reign of

B

Henry

Henry the Eighth; and were first propagated in *Kent*, *Essex*, and *Surrey*, but have since spread into the *South* and *West* Parts of *England*, and of late Years into *Nottinghamshire*: and such large Improvements have been made, by the great Encrease of Hop-Plantations, especially the last Sixty Years, that a few Counties only are able to supply *Great-Britain* and *Ireland*, and Foreign Countries also upon Occasion, with Hops superior in Goodness to any rais'd in foreign Parts.

Many great Estates and Fortunes have been made by this Plant in *England*, not only by the Hop-Planters, but by others who deal in Hops; and 'tis not to be doubted but the like might have been made in *Ireland*, if the same Care and Industry had been used in the Culture thereof.

Though considerable Improvements have been made of late Years in this Kingdom in several Branches of Husbandry, yet little or none hath been made in the raising of Hops; this Part of Husbandry having been more neglected than any other: and yet it will appear, that no other wou'd turn so much to the Account of the Undertaker.

Several Gentlemen have from Time to Time made small Plantations of Hops, and tho' they found them to agree well with their Soil, yet either for want of Poles, or of Skill or due Care in the Management of them, or on Account of some other Discouragement, they for the most part laid them aside, or but faintly carry'd them on.

'Tis true, that while *Flemish* Hops were imported into this Kingdom, they were generally sold so cheap, that it was not worth any Man's while to raise them here; but since the passing an Act in *England* in 1711, which prohibited the Importation of Hops into *Ireland* from any Country, other than *Great-Britain*, the Case is very much alter'd in Favour of the Hop-Planter here, who has thereby a better Prospect of getting a good Price for his Hops; for now
that

that we have but one Market for purchasing Hops, whenever the Season is unfavourable for Hops in *England*, they are sure to sell at a very high Price, which lays us under great Distress, tho' perhaps at the same Time they are sold cheap in other Countries.

We have many other Motives and Advantages in our Favour, to encourage us to set about the planting of Hops; I shall only take notice of the following.

1st. The Soil in several Parts of this Kingdom, especially in *Leinster* and *Munster*, is very fit and proper for Hops; and perhaps as good, if not better, than can be found in any other Hop-Country.

2d. Where Land is fit for Hops, it is at the same time fit for raising Poles, of one kind or other.

3d. The Temperature of our Air is such, that we are not subject to such piercing *Easterly* Winds in the Spring, or to such Droughts or Mildews in Summer, (which frequently ruin the Hop) as those Countries are, which are on or near the Continent.

4th. Hop-Plantations give Employment to a great Number of poor People of all Ages and Conditions; Men, Women, and Children finding Work either in digging, dressing, hoeing or poleing, tying, or picking of Hops.

5th. The Labour of our People is cheap, and consequently we may raise Hops with the less Expence.

6th. So many small Hop-Yards have been already planted in several Parts of the Kingdom, that Sets or Roots may be easily procured.

7th. Hops Imported being subject to great Charges on Account of Commission, Freight, Insurance, Duties and Damage by Sea, must come to Market here dearer, than Hops of our own Growth, which are not subject to any such Charges, and are raised on or near the Place of their Consumption; which must be a great Encouragement to all Hop-Planters here.

8th. So much Money will be layed to the Kingdom yearly, as the Value in Hops we raise will amount unto.

9th. We are often in such Distress for want of Hops, that we are forc'd to take up with the worst that can be got, which commonly spoil our Drink; sometimes we pay near half as much for Hops, as we pay for Malt, and at other Times, they are so scarce, that they cannot be had at any Rate; whenever this happens, it causes a great Decrease in the Brewing of Malt-Liquors, and sinks the *King's Revenue* considerably in the Article of *Excise*. But if we could raise such a Quantity of Hops, as would be sufficient to keep them always at a moderate Price, it would be a Means not only of encreasing the *Revenue*, by a greater Consumption of Malt-Liquors, but of lessening the Importation of Wines, and consequently be an Encouragement to *Tillage*.

10th. Another great Encouragement, which the Hop-Planter has, is this, that he may be sure of a Market for all the Hops he can raise; our Wants and Demands for them being constantly very great.

11th. But the greatest Encouragement to the Hop-Planter, is the Profit he may reasonably propose to make by his Hops. They reckon in *England*, that they have but a moderate return, when the Produce of an *English* Acre of Hops sells for no more than 30 Pounds; they frequently have 50, 60, 80, or 100 Pounds from an Acre, nay, some have got 200 pounds from every Acre of their Hop-Ground, at a Time when other Hops generally fail'd, and theirs hit. Such extraordinary Profit being very uncertain, is not to be depended on, but may be reckon'd to make amends for failing Years.

The whole Expence or Charge of an Acre is computed in *England* at 15 *l.* a Year, consequently the clear Profit of an *English* Acre will be 15 *l.* per Ann. By the same Rule, as an *Irish* or *Plantation* Acre is in proportion to an *English* Acre, nearly as 8 to 5, the Produce of an *Irish* Acre will be worth 48 *l.* the Charge 24 *l.* and the clear Profit 24 *l.* And though we should
suppose

suppose the Profit to be much less, than what is here represented, yet even then it will be sufficient to shew, that neither our Land nor our Industry, can be employ'd to so much Advantage in any Branch of Husbandry, as in Planting of Hops.

Ten Hundred Weight of Hops is reckoned in *England* to be a middling Crop for an Acre of good Land; an *Irish* Acre will in proportion yield Sixteen Hundred Weight, or near Eight Bags. The middling Price of Hops in *England* is computed to be Three Pound the 100 Weight, and when those Hops come to the *Irish* Market, we reckon Four Pound the 100 Weight to be the middling Price. At this Rate the middling Value of an *Irish* Acre of Hops will be Sixty-four Pound, which surely is sufficient Encouragement for any one to engage in this Improvement.

The Quantity of Hops, commonly consumed in this Kingdom in a Year being reckon'd to be about 6000 Bags, if an *Irish* Acre will produce 1600 Weight or 8 Bags, then 750 Acres will yield as much Hops as we consume yearly.

This shews how much it is in our Power, and how easy a Matter it is to relieve our Distresses and Wants in the Article of Hops. If only 75 Gentlemen would enter heartily into this Affair, and lay themselves out to plant 10 Acres each, they would soon be able to supply our Wants, or make them much easier, with great Profit to themselves, and Benefit to the *Publick*; not that it is imagin'd that 750 Acres will be always sufficient to supply our Occasions; for some Years Hops almost totally fail, but it is judg'd that 1000 or 1200 *Irish* Acres well managed would yield a Stock sufficient to hold out, and serve us for the most part both in ordinary and failing Years.

We must take notice, that when we talk of the Profit or Quantity of Hops growing on an Acre, we suppose all along the Hop-Ground to be rich, and due

due Care taken both in the Culture of the Ground, and Management of Hops ; for if they shou'd be mis-managed or neglected, or the Soil be poor, instead of yielding any Profit, they wou'd be a certain Loss.

'Tis necessary here to give this farther Caution, that it is not proper for poor Farmers, or Men of small Fortunes, to engage far in this Improvement, for it requires a considerable Stock at first to cultivate a large Plantation, to furnish Poles, and do every other Requisite ; the Expences will be great, and the Undertaker must expect to lie out of his Money for 2 or 3 Years, before he can have any Return of Profit. And even when his Hops come to their bearing State, and he is in hopes of making good the Charges he has been at, he may be disappointed by a bad Season ; these are Risks and Expences, which a Man that has not a good Fund, ought not in Prudence to venture upon.

Not that it is hereby intended to discourage any one from planting small Parcels of Hops suitable to his Abilities, for the poorest Farmer may easily spare Time and Labour to plant a few Hops in a Corner of his Garden, and Sallows, Willows, or Ash for Poles in his Hedges ; which will yield him a considerable Profit, without laying out any Money for the same.

A large Plantation is an Undertaking fit for Gentlemen who live upon their Estates, or for rich substantial Farmers. Where such are willing to engage in it, and find upon Trial of a small Plat of Ground, that their Land is fit for Hops, 'tis advised that they employ several Acres of their best Land this Way, make early Provision for Poles, by planting Coppices of Trees fit for that purpose, and make this their chief Care and Business ; whereas if they content themselves with a small Hop-Yard, as it will not be worth their Attention, it will probably soon come to be neglected. A Gentleman who shall lay out 10 Acres in Hop-Plantations, and employ skilful Hands, and spare no Cost in the right Management thereof, may
get

get as much Profit by those 10 Acres, as by 500 Acres otherwise employed.

The Hops of Ten Acres, rightly manag'd, may very well be suppos'd to sell for 500 *l.* and allowing even 200 *l.* for all Expences, there will remain 300 *l.* clear Profit ; which is more than can be got by 500 Acres in the common Way of Husbandry

'Tis common in *England* to see ten, twenty, or thirty Acres of Hops, or more in the hands of one Man, and some receive 2000 *l.* a Year for their Hops, notwithstanding the high Price of Labour, Manure, and every other Article relating to the Management of Hops. But then no Care, Industry or Expence is wanting, to make their Plantations flourish.

Having thus mention'd several Motives to encourage us to raise Plantations of Hops, I shall now take Notice of such Disadvantages or Difficulties we may be suppos'd to labour under, and which may be objected as Discouragements against engaging in such an Undertaking.

1st. It may be objected, that we want Shelter to defend Plantations of Hops in the Spring from Cold blasting *Easterly* Winds, and in Autumn from stormy Winds from the *South* and *West*.

To this it may be answer'd, that *Easterly* Winds are not so piercing here as in Places on or near the Continent, from whence those Winds blow ; because they must pass over two Seas before they come to us ; and 'tis well known, that Sea-Breezes very much qualify cold frosty Winds, and also such as are hot. And with regard to Shelter, 'tis to be presum'd, that whoever shall make a Plantation of Hops, will at the same time take care, that besides the Conveniency of Land-Shelter, which the Situation of the Ground may afford, his Plantations be also defended, on the *East*, *North*, and *West*-Sides especially, by large Hedges, and Rows of tall Trees, against violent and contagious Winds ; and Shelter may be rais'd at a small Expence

Expencc, and almost as soon as Hop-Plantations of any Extent shall be grown up large enough to require it.

2d. It may be strongly urged, that without Poles it is impossible to raise Hops, that it is a vain Thing to plant Hops, since no Poles can be got ; that we are at present quite destitute of them, and that it will take a great many Years, before we can raise a Stock of Poles sufficient for our Occasion.

It must be own'd, that there is no raising of Hops without Poles, and that at present there is no Quantity of Poles to be got at a reasonable Price ; this is one Instance of our bad Husbandry, no Care having been taken, either by coping to preserve the Growth of old Woods, or to make new Plantations of Trees fit for Poles. This want of Poles is the chief Cause that has hindred Gentlemen from planting of Hops ; but this Objection or Difficulty will soon be remov'd, when it shall appear, by the Method and Directions herein after mention'd for raising of Poles, that a sufficient Quantity of them may at a small Expencc be rais'd in 4 or 5 Years time, which will be almost as soon as a large Plantation of Hops can be grown up fit for poleing : so that if a Gentleman shall begin this Year to stock himself with Hop-Plants, and shall at the same time plant Coppices of *Poplar*, *Abele*, *Alder*, *Sallow*, or *Willow*, and also *Ash* or *Chestnut*, by the Time that his Stock of Hops shall be increas'd, and the Increase grown up large enough to pole, the first Sort of Poles, of the *aquatick* Kind, will be also grown large enough for Use ; and by the Time that first Set of Poles are worn out, the *Ash* and *Chestnut* will come in, and from thenceforward constantly supply his Hop-Ground.

When Hops first began to be planted in *Nottinghamshire*, by the Sides of the River *Trent*, which was about 20 Years ago, it was difficult to get Poles, and none could be had for less than 30 Shillings the Hundred

Hundred. And tho' Plantations of Hops are vastly encreased in that County, yet so great has been the Plantations for Poles, that they now sell for 15 s. the Hundred; which shows that where Hops thrive and encrease, Poles will not be wanting.

3d. It may be urg'd as a Discouragement to the Hop-Planter, that the Hop is a very tender Plant, and an uncertain Commodity to deal in, that it is very apt to suffer by Winds, Blights, Mildews, Rains, Droughts and Insects; and when it wholly fails, the Loss is intolerable; and if there be a general good Crop, the Price will be so low, that it will hardly answer the Charge.

It must be own'd that Hops often fail, by some one or other of the Causes before mention'd, yet we find by the Experience of *England*, that they are not discouraged by Accidents of these Kinds from keeping up and enlarging their Plantations of Hops; though they fail in one Place, they may thrive in another; they may hit in higher Grounds, when they fail in lower; and in failing Years, if your Quantity be small, they are sure to sell at a high Price: it may be your good Fortune, that when other Hop-Grounds generally fail, yours may prosper, by having a better Soil, Shelter, or Exposure. And if this should happen, you may gain more by such a Crop in one Year, than others may in three; and if we should suppose a general Scarcity, which happens frequently in 3 or 4 Years Time, yet a Year of Scarcity is sometimes a Benefit to the Planter, because it will serve to consume the Old Stock of Hops, and keep up the Price of new Hops for several Years following, which will make sufficient Amends for failing Years; and you must observe, that in Years, when Hops fail, you avoid a great Part of the Charge, which is that of picking and drying. And if Hops should be every where in plenty, and their Price very low, if you can forbear selling, lay up your Hops, and you may in a fail-

ing Year, which often follows a plentiful one, be well paid for your Forbearance.

4th. It may be objected, that *Irish* Hops are not as good and as strong as *English* Hops, that upon Trial they have been found to be much weaker, and therefore are less esteem'd, and will not sell where *English* Hops can be got.

In Answer to this, we are to observe, that the *Flemmings* made the same Objection against *English* Hops, when they were first planted in *England*; and yet we now find that *English* Hops far exceed the *Flemmish* in Goodness. It must be acknowledg'd, that few or no Hop-Yards have hitherto been manag'd in this Kingdom as they ought to have been; either an improper Soil has been chosen, or there has been no due Care taken in cultivating and manuring the Ground in the Beginning of every Season, or in Hoeing and Weeding it after, or in drying the Hop, or there has been a Want of Poles or Shelter; a Neglect or Mismanagement in one or other of those Articles, has been the Occasion that the Hops produced among us have been not only small in Quantity, but poor and weak in their Kind. 'Tis common to see the Hills so near and crouded together, that there is not free Liberty, for the Air, the Hills and Allys over-run with Weeds, and the Hop left to shift for it self; and 'tis no wonder that in such Case the Hop should degenerate. It is the same thing with regard to any Garden-Roots or Plants, if we do not give them the proper Soil, Manure, Weeding or Hoeing, they will dwindle away, and be worth nothing; but when they are right managed, as they are in *England*, they thrive and flourish with us as much as they do there; and 'tis not to be doubted, but that, if the same Pains were taken in the Management of Hops as are used in *England*, where they take as much Care of their Hop-Grounds as of their Gardens, they wou'd prosper as well in this Kingdom. And notwithstanding

we are far from ordering our Hops as we ought to do, yet we have the pleasure to find, that Hops rais'd this last Summer in several Parts of the Kingdom, have upon Trial answer'd as well as any imported from Abroad.

5th. It may be objected, that we have not Sun enough in this Kingdom for ripening Hops, and that our Summers are cold, wet and cloudy, and do not afford a sufficient Warmth to bring them to Maturity.

It must be confess'd, that our Summers are sometimes cold and wet, and when they are so with us, they are generally the same in other Countries; so that we fare no worse than our Neighbours; and even in such unfavourable Seasons, if you have some Intervals of dry or sunny Weather, you may have a tolerable Crop: and though your Quantity of Hops be small, yet the high Price they sell for at such a Time, may make amends.

Hops do not require a very hot clear Sun, they often even suffer thereby, and thrive better in the Shade in dry Weather, than when expos'd full to the Sun; tho' the Summer be cold, yet if it be dry, the Hop will answer well.

We seldom want Sun or Warmth enough to ripen our Hops, especially in the *Southern* Parts of the Kingdom; unless it be in such Seasons, when we have continual excessive Rains in *Summer* and *Autumn*, by which not only Hops, but all other Fruits and Grains are liable to suffer. But in order to avoid the Inconveniencies which arise from cold and excessive Rains and Winds, which ought chiefly to be guarded against, you ought to plant your Hops in a dry, mellow, warm Soil, lying open to the *South* or *West*, and provide a warm Shelter of Hedges on the *East*, *North*, and *North-west* Sides, and tall Trees on the *West* and *South-west*, which may break the Force of violent Winds, and yet not hinder the free Passage of Air; and take care that your Hop-Hills be not too close together, but that the Air may freely circulate

about them, to dry up the Moisture, and make the Hop-Vines perspire the better.

Though Fen and Mould be apt to over-run your Hops in a wet Season, yet Lice and Insects, which infest the Hops, are destroyed thereby.

6th. It may be farther said, that great Skill and Address are required in the right ordering of Hops, that any Neglect or Mismanagement may prove fatal, and that at present we want skilful Men, and must therefore run great hazards in attempting the Culture of so nice a Plant.

To this it may be answer'd, that the Management of Hops is so well and so generally understood in all the Hop-Countries in *England*, that the common Farmer, and even Labourers, are Masters of the Art; there is nothing in it but what may be easily understood and put in practice, even by those who are Strangers to it; we have many in the Kingdom who have been long used to the Management of Hops, and where skilful Men are wanted, they may be easily procur'd. But that nothing may be wanting to engage and encourage Gentlemen to fall into so useful an Improvement, we think it proper to give all the Rules and Directions, which ought to be observ'd in every Article relating to the Management of Hops, and which are found to be successful in such Places where Hops are best cultivated. With this View the following Instructions are drawn up and publish'd, which are taken from the Practice and Improvements now in use in those Countries, where Hops are in greatest Reputation; and from such Authors who have written best on this Subject, such as *Scot, Markham, Woldridge, Houghton, Mortimer, Lawrence, Bradley, Miller*, and others; nothing being omitted which may be found useful or material in any of them. So that if Gentlemen will take but due Care, they will not be at a loss to know how to manage their Hops, the Instructions being full, and easy to be understood and put in practice.



CHAP. I.

Land fit for Hops.

A Rich, deep, mellow, dry Soil, more inclining to Sand than Clay, is in general the fittest for Hops; and in particular, a black Garden-Mould is excellent,

The deeper the Soil the better for the Hop, because the Hop strikes its Tap-Root as deep as the Goodness of the Soil will invite, and thereby receives greater Nourishment.

Rich, deep, mellow Soils have the following Advantages, they produce strong and vigorous Plants, and a great Quantity of Hops; they need much less Manure to be brought to them, than what poor shallow Soils require; they are not apt to be over-soak'd in wet Weather, or over-parch'd in dry, and will bear Hops with Vigour for 40 or 50 Years, when shallow Soils will not hold out well above 10 Years without great Dunging: And 'tis frequently found, that an Acre of rich Ground will yield 20 *l.* more Profit in a Year, than an Acre of poor shallow Ground, though manured at a considerable Expence. Therefore chuse the richest and best Meadow-Ground you have for Hops.

In *England* they indifferently use low or rising Grounds for planting of Hops, being govern'd in the Choice by the Goodness and Depth of the Soil; for this Reason in *Essex* and many other places they generally

rally make use of low, flat, moory Grounds, or such as lie on the Sides of Rivers, those being their best and deepest Soils; but then they take care to drain them well, and to make their Hop-hills high and large. But in *Kent, Surrey, Hampshire*, and other Places, they commonly plant their Hops on rising Grounds, which are their best Soils.

Both Situations have their respective Advantages and Disadvantages; low Grounds have commonly a greater Depth of Soil, and produce a greater Quantity of Hops, and are not so subject to suffer by Droughts of stormy Winds; but then they suffer most by Rains in wet Seasons, and by Mildews in dry. On the contrary, rising Grounds have a greater Freedom of Air, and suffer least by wet Weather or Mildews; but then they suffer most by Droughts in Summer, and Storms in Autumn: For this Reason it is advisable for every one, who intends to make large Plantations of Hops, to plant both in low and upper Grounds, that when the Season proves unfavourable for Hops in one Situation, he may have a good Chance to have them escape, and thrive in the other.

A deep, mellow, hazely Mould, containing a due Proportion of Sand and Clay, agreeing best with Hops, if your Land be too light, you may mend it by laying thereon strong clayey Mould, Marl or Lime; and if it be too stiff, you may correct it with Sand, Gravel, Ashes, or light Mould: but fresh Mould, rotten Dung, and several Composts will serve both for stiff and light Grounds.

Having mention'd such Lands as agree well with Hops, I shall now take notice of such as are not fit for this Plant, and which ought to be avoided as such. Stiff Clays, very wet and spewy Soils, and such as are commonly subject to be over-flown in the time of Floods, are altogether unfit for Hops; for they retain Water, which lying long at the Roots of the Plant, chills and rots them.

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Likewise hard Gravels, stony Grounds, and such as are for the most part Sand, are very improper for Hops; as are also those that are rocky and shallow, for there ought to be a Foot and a half Depth of Soil at least, to hold the Poles fast and steady against the Wind.

There is no certain Judgment to be made of the fitness of any Ground for Hops before Trial, therefore it is prudent, in every one who would engage in the planting of Hops, not to undertake a great deal at first; if he begins with a quarter, or half an Acre at most, it will be sufficient for him to judge of the fitness of his Soil; and if it answers upon Trial, then he may with Safety and Courage go on to enlarge his Plantations.

CH A P. II.

The Situation of the Ground.

THE best Situation of a Hop-ground is such as inclines to, or lies open to the *South*, so that it may have the Benefit of the Sun for the greatest part of the Day. Chuse therefore if you can, a Declivity to the *South*; but whatever be the Situation of the Ground which you make choice of, whether low or rising, take care that it be defended on the *East*, *North*, *West*, and *South-west* Sides, by Hills or Trees lying at a small Distance.

But let it lie open to the *South*, spreading out to the *South-east* and *South-west* Points, in this Form; by which means, the Sun will early in the Morning carry off the cold Dews from the young Sprouts in the Spring, and from the Blossoms in Summer, and continue longer on the Hops in the Evening.



Hops

Hops planted on the *South-Side* of a Hill will receive the full Warmth of the Sun, without overshadowing one another. A Declination to the *East* or *West* may do well also, but Hops growing on the *North-Side*, will be more expos'd to cold Winds, and over-shadow one another, and thereby lose the necessary Warmth of the Sun.

Though it has been observ'd, that Hops growing on the *North-Side* of a Hill have some Years prosper'd better than any other, which might have been occasion'd either by their sprouting out late in the Season, and thereby avoiding the Danger of being blighted in the Spring by cold Winds, or by being less expos'd by their Situation to scorching Heats in Summer.

If it is in your power, chuse such a Situation, where you may command a small Stream of Water to be brought into your Hop-Ground in dry Weather; for at such times Hops being apt to fail in most Places for want of Rain, yours will be in a thriving Condition by the means of such a Stream, which may be distributed into all the Alleys of your Hop-Grounds with ease, by making small Channels on the Descent of the Ground from one side of the Plantation to the other, by which means the whole will be water'd at a small Expence, and such a Season will make amply amends for your Trouble.

Hops thrive best in an open Situation, where the Air may freely pass round and between them, to dry up and dissipate the Moisture; and therefore 'tis recommended to those, who are dispos'd to make large Plantations of Hops, to lay out two or three Acres together, rather than to throw them into small Plats or Divisions, where they may be too much confin'd and over-shadow'd, and thereby want a free Air, and be more expos'd to Mildews or Honydews.

If you can, chuse a Situation, where you may have the Shelter of Hills to the *East*, *West* and *North Sides*;
but

but whatever your Situation be, take care to have a warm Shelter of tall Quickset Hedges on the *East*, *North*, and *West* Sides of your Plantation, to defend the young Sprouts from cold frosty Winds in the Spring, and the Hops, when grown up, from Storms in Summer and Autumn. And for greater Security it may be proper to plant two Quickset Hedges on the *East*, *West*, and *North* Sides, at 100 or 200 Feet distance one from the other, and to plant the Interval between them thick with Trees fit for Poles, which will afford great Shelter to your Hops, and at the same time serve as a Nursery for supplying your Hop-Ground with Poles, which being near at hand, will prevent any Expence in Carriage.

But in regard that this Country is very subject to violent Storms from the *West* and *South*, which frequently break and blow down the Hop-poles when they are loaded with the Vines and Hops, and thereby utterly spoil them; in order to guard the better against such an Evil, it is also proper to provide a Shelter of several Rows of tall Trees on the *West* and *South* Sides of your Plantation at some distance from the same, which will serve to break the Force of those Winds, and yet not hinder the free Passage of Air: for those Winds are always beneficial, and do no hurt but when they are too violent, and they are better broke by tall Trees than by low close Hedges. Such Trees may be *Ash*, *Chestnut* or *Fir* on upper Grounds, and *Poplar* or *Abele* on lower.

It will be some Advantage to have your Plantation near your House, for thereby you will save some Expence in the Carriage of Dung or Manure to your Hop-Ground, and by being so near and under your Eye, you will sooner redress any Disorder that may happen to your Poles or Hops.

The Hedges about the Hop-Ground ought to be made so strong and so close, as to prevent Hogs, or any Cattle or Fowl from getting in to spoil them.

C H A P. III.

How to prepare the Land for Planting.

HAVING pitch'd upon your Ground, the next Business is to prepare it for planting Hops therein ; if you intend to begin with a small Quantity of Land, as a quarter of an Acre, which is sufficient for Experiment, let it be Lay-Ground, and dig it with the Spade in *October*, as deep as you can, taking care to carry off all the Stones, and Roots of Weeds and Grass, which after digging appear above ground ; and let it lie open thus the whole Winter, to be the better mellowed.

In many Parts of *England*, when they break up Ground for Hops, the Plow goes first, and lays down the Swerd or grassy Sod, and then Men follow it with their Spades, and digg one Spit in the Furrow where the Plow had gone, and throw it on the Swerd, and so plow and dig till the Whole be done. And they compute that with one Plow and 16 Diggers they can plow and dig an Acre in one Day, by which means they raise about 12 Inches Depth of Earth, which will be a lasting Fund for nourishing the Hop-hills. But if you intend to lay out a greater Quantity of Land for Hops, and your Ground be sour, and abounds with Weeds and strong Grass, then plow the same in Spring as deep as you can, and give it a Summer's fallowing, in order to destroy the Roots of Weeds and Grass, and burn them if you find them in great quantity. Continue the same Tillage which is practis'd on Land design'd for Corn ; or rather, which is more preferable, cross-plow and harrow it well in Summer ; and in the End of *July*, or Beginning of *August*, sow it with *Turnep*-Seed, which being hoed twice, at the distance of 8 Inches from one another, will make the Ground fine, destroy the Weeds,

Weeds, and make the *Turneps* large; and before *January* you may feed your Cattle with the *Turneps*, which will more than answer all Expences you have been at in preparing your Ground. And when the *Turneps* are off, give it another Plowing, which, with the Winter mellowing, will make it fit for planting Hops in the Spring; but if your Ground be rich, mellow, and dry, whether it be Lay or Fallow, begin to plow it up in *October* as deep as you can, and let it thus lie all the Winter to mellow by the Frosts, Rains and Snows; and in the Beginning of Spring, harrow it well and plow it again, and in *March* harrow it fine, and lay it as even as you can.

If the Mould of your Hop-Ground be naturally good, and be made fine by the former Preparation, there will be little or no Occasion for any Manure to be brought to your Ground the first Year: but if the Soil is not rich or fine enough, then in Spring bring into your Hop-Ground some fresh Mould, or Mould mixt with old rotten Dung or other Manure, in such Quantity, that there may be half a Bushel for each Hill; if your Ground lies low, and subject to Water, take care to make Drains to carry off the Water, that it may lie dry.

C H A P. IV.

Of marking out the Ground for Hills, and the Distance of them.

WHEN your Ground is thus prepar'd by plowing or digging, and made level and fine by the Harrow in the Spring; then on a streight Side of the Field, at 15 or 30 Feet distance from the Hedge, stretch a Line parallel to the Hedge, with Knots or Rags tied in it at such Distances as you design your Hills, and stick in the Ground a sharp pointed Stick

at every Knot, as Marks where the Hills are to be; continue the Line in the same manner the whole Length of your Ground, and from this first Row you may mark out the rest of the Ground, either in

Squares Chequer-wise thus, by making paral-

lel Lines at the Distance the Hills are to be, or in

the Quincunx Form thus, where the Hills

of every second Row lie opposite to the Middle of the first, in a Triangular Form.

If you will plant after the last Form, you may with great Exactness mark out the Hills with the help of a Triangle, made of three straight Rods or Sticks, each being six, seven or eight Feet long, according to the Distance of the Hills; for two of the Angles or Points being applied successively to two of the Hills already mark'd out in the first Row, the other Angle of the Triangle will point out exactly the Places where the other Rows or Hills are to be; and thus you may mark out the whole Ground.

If the Ground you design to plant be large, and such as requires the Hills to be 8 Feet distant from one another, and if it lie so that you can conveniently plow it, then it is best to mark out your Hills in Squares, according to the first Form; because when the Hills are so placed, and at a due distance, you may with the Hoe-plow, at any Time either in Winter or Summer, plow the Interval between the Hills, to destroy the Weeds and raise your Hills, which will save a great deal of Labour in digging and hoeing. But if your Ground be small, and such as requires the Hills to be at no greater distance than 6 or 7 Feet from one another, or that you design to turn it with the Spade or Breast-plow, then plant in the Quincunx Form,

Form, which is more beautiful to the Eye, and better for receiving the Sun and Air. But which Way soever you chuse, pitch a small Stick at every Place where there is to be a little Hill, and if your Ground be not rich enough, bring into it the best Mould you can get; and at every Stick dig a Hole about a Foot square, and fill it with the Mould to set your Plants in.

The Distance of the Hills shou'd be according to the Nature and Goodness of your Soil; if your Soil be dry, hot, and shallow, then about six or seven Feet will be a convenient Distance, but if your Soil be deep, rich, moist, and subject to bear large Hops and Leaves, then eight or nine Feet is the proper Distance. But in old Ground, if your Hills are too far asunder, that Inconveniency may in some measure be remedy'd by enlarging the Hills, and increasing the Number of Roots and Poles and in each Hill; and if your Hills be too near, then lessen the Roots and Number of your Poles, for over-poling of Ground either in Number or Height, injures more than under-poling.

C H A P. V.

The Season for Planting.

TH E Season for Planting of Hops is from the latter End of *February* to the 10th of *April* at farthest, at the Time, when the Hop begins to sprout; which in dry light Grounds, and forward Seasons, will be about the latter End of *February*, but in moist heavy Grounds, and backward Seasons, not till the latter End of *March*. This Time is usually chosen for planting Hop-sets, not only to avoid the Danger of Frost and Rain in Winter, but because this is the proper Season for pruning and dressing the Hop; and it is at this Dressing, that Sets or Roots are cut off for planting: not but that *October* is also a good Season,

Season, if you plant in a dry mellow Soil : but then
 Sets are not to be had, unless from a Ground that is
 dug up and destroy'd, or from Hills that are suffer'd
 to be dress'd out of their proper Season.

C H A P, VI.

The Choice of Sets or Roots for Planting.

TH E R E are several Kinds of Hops, those
 most in Esteem are the long White Hop, the
 Oval, and the long square Garlick-Hop, which
 differ from one another in the Colour, and Shape of
 the Bells or Hops, in their Degree of bearing and
 Time of ripening. The long white Hop is most e-
 steem'd, as being the most beautiful, and a great Bear-
 er; the Beauty of Hops consisting in their pale bright
 green Colour. The Oval Hop is beautiful, but does
 not produce so great a Quantity. There is a sort of
 this Kind of white Hop, call'd the Early or Rath
 Hop, which is ripe a Week or ten Days before the
 common; but 'tis more tender, and bears a thin Crop:
 the only Advantage it has, is, that it comes first to
 Market. The long and square Garlick-Hop is the
 greatest Bearer, more hardy, and something later ripe
 than the former; but by reason of the Redness towards
 the Stalk, is not so beautiful to the Eye, and there-
 fore not so much esteem'd as the other Sorts.

There is a sort of Hop, to be found in most Hop-
 Grounds, call'd the Female Hop, and by some the
 Wild Hop, which puts out a great Number of Bran-
 ches of small Flowers about the Beginning of July,
 not in any respect like the true Hop; but in the lat-
 ter End of July, just before the true Hop begins to
 flower, they are ripe, and then with the least Motion
 of Wind they shed a Cloud of Dust, or *Farina*, which
 disperses it self quite round about, and possibly may be
 of

of use to impregnate other Hops ; and therefore some advise to leave one or two Hills of them standing in the Hop-Ground, till farther Trial be made whether they are of any, or what Use. But the common Practice is to mark them at their first Appearance, and to root them out afterwards, because they bear no Bells or Hops, and being commonly the strongest Plants, without Care in marking them, Sets may by Mistake be taken from them.

There is a poor starv'd Hop, call'd the Wild Hop; but this is not thought to be a distinct Sort, but a Hop which has degenerated for want of Culture.

The several Kinds and Goodness of Hops may be known also by the Colour of the Vines, Binds or Stalks: the whitish Binds produce the White Hops, both the Long and the Oval ; the Grey or Greenish Binds commonly yield the large Square Hop ; but Red Binds produce the Brown Hop, which is least of all esteem'd.

You ought to be very Curious in the Choice of your Plants or Sets, as to the Kind of Hop, for it is a great Trouble and Loss to the Planter, when his Garden proves a Mixture of several sorts of Hops, ripening at different Times. He that plants the three Sorts of Hops aforementioned, viz. the Early, the Long White, and Square Hop, in three distinct Parts of his Ground, will have the Conveniency of picking them successively as they become ripe.

Hop-Sets are Cuttings from the Roots or Branches which grow from the main Root or Stock.

Procure Sets, if possible, out of Ground which is entirely of the same Sort you wou'd propagate ; let them be 6, 7, or 8 Inches long, with 3 or more Joints or Buds on them ; all the old Bind and hollow Part of the Set being cut off.

If there is a sort of Hop you value, and would increase Plants or Sets from, you may lay down the superfluous Binds when you tye the Hops, cutting off the

the Tops, and burying them in the Hill; or when you dress the Hops, you may save all the Cuttings, and lay them in Rows in a Bed of good Earth, for almost every Part will grow, and become a good Set the next Spring.

Some have try'd to raise Hops by sowing the Hop-Seed, but that turns to no account; because that way is not only tedious, but the Hops so produced are of different Kinds, and many of them wild and barren.

Chuse the largest Sets you can get, the best are to be had out of Gardens, which have been well kept, and where they have been rais'd very high the preceding Year; which encreaseth the Plants, both in Number and Bigness. Take care that your Sets be all of the last Year's Growth, which are always white, and so are easily known.

C H A P. VII.

The Manner of Planting.

TH E Ground being made level and mark'd out for Hills, then in the latter End of *February* if your Ground be light, or late in *March* if the Ground be strong and moist, in the Places where you laid your Sticks, make Holes about a Foot or 16 Inches over, but the Depth of them must be according to the Nature of the Ground; 10 or 12 Inches Depth in general is sufficient. But if the Ground be shallow, and that you meet with hard Clay or Gravel, by no means enter into it, for then you make a Basen to retain Water; but in such Case, instead of going deeper, raise up a small Hill of Good Mould. But if there is a good Depth of rich mellow Mould, then dig the Hole a Foot and half, or two Feet deep, and you will find the Hops will thrive the better, for the Tap-Roots naturally run downwards.

If

If Sets can be had from a Hop-Ground at a small Distance, bring no more Sets at a time than you have Holes ready made for them, and plant them as soon as possible, taking care by keeping the Roots in wet Litter to prevent their growing dry ; but if you procure Sets at a great Distance, as soon as they are cut, lay them up in dry Sand or Earth, or pack them in such a manner that no Air may get to them before they are planted ; and when you have brought them home, bury them in Ground, and plant them as soon as the Weather will permit.

When all things are ready for planting, fill up the Holes with the Mould you threw out, if the same be naturally good ; having first broke it fine with a Spade, but if the same be not rich enough, then make use of fine fresh Mould or Compost provided for that purpose, about a Peck or two to a Hill, but by no means put any Dung into it.

Then with a Dibble or Setting-stick, such as Gardeners plant Beans with, make five or six Holes the Depth of your Sets, one in the Middle perpendicular, and the rest round about sloping, and meeting at the Top near the Center ; put your Sets therein, and let them stand even with the Surface ; press the Mould close to them, and cover them with fine Mould 2 or 3 Inches thick.

Some place all the Sets in the Middle of the Hole before they fill it, spreading the lower Parts of them towards the Sides, and laying the Tops even with the Surface ; then holding them hard with one Hand, with the other they throw in the Mould, and press it round about them : either Way may do, but the first is most in Use.

You must be careful to set the Ends of every Set upwards which grew so before, which you may know by the manner the Buds lie, and let no part of the dead Stalk remain on the upper Joint.

If the Sets have begun to shoot before you have Time to plant them, by no means cover the young Buds with Mould, for that would destroy them.

C H A P. VIII.

Dressing of Hop-Ground the Summer after Planting.

THE Ground being first planted, all that isto be done the Summer following, is to keep the Hills and Alleys clear from Weeds by frequent Hoeings, to dig the Ground in the Month of *May*, and carry off all the Stones which are turn'd up by digging; afterwards to raise a small Hill round about the Plants, and to throw some fine Mould on the Roots, and in the latter End of *May*, or Beginning of *June*, to twist all the Vines or Branches together into a Bunch or loose Knot, and to lay them thus twisted on the Top of the Hill. Some chuse to put one or two Sticks of 3 or 4 Feet long to each Hill for the Vines to twist about, as more agreeable to the Hop, especially if the Vines be vigorous; but Care must be taken to prevent the Hop from bearing the first Year, for that wou'd weaken the Plant.

Some advise to set two Rows of Beans between the Hills, as well to yield some Profit the first Year, as to shelter the young Buds from the Heat of the Sun.

C H A P. IX.

Dressing of Hop-Ground the Winter after Planting.

THE Hop-ground being kept clear from Weeds in Summer, the *Michaelmas* following, lay on the Alleys, between the Hills, rotten Dung,
or

or Dung mixt with Earth, or other Manure, which every Hop-Planter is suppos'd to provide for every Winter's Dressing, about 60 or 80 Cart-Load to an Acre, more or less according to the Goodness of the Land: and in *November* or *December* following dig or plow it in, that it may the better incorporate with the Soil; or you may prepare your Manure or Compost in some other convenient Place, to be brought to your Hop-Ground in the Spring, but do not omit in the mean time to plow or dig your Hop-Ground some time in the Winter. Some give their young Hops a small dressing in *October* after they are planted; and in doing so, they carefully open the Hills in dry Weather, and cut the Binds a little lower than the Surface of the Earth, and cover the Tops of the Plants with fine Mould two or three Inches thick, and lay thereon a small Coat of Earth from the Alleys, which will defend them from the Frosts in Winter, and be of Use at the next Dressing in Spring; but this Dressing in *October* should not be practised but in the first Year after planting.

C H A P. X.

The Manner of dressing and pruning of Hops in the Spring.

TH E latter End of *February* in the second Year, when the Weather is fair, open the Hills, and with a sharp Knife cut off the Shoots of the first Year to within an Inch of the old Stock, together with all the young Suckers that have sprung from the Sets, and cover the Stock with fine Earth. To keep the Knife sharp, you should have a Whetstone always by you at Dressing.

But in the third and following Years, when you dig your Hop-Ground in *February*, let the Earth be taken away with a Spade or Hoe round about the Hills

very near them, that you may more conveniently come at the Stock to cut it ; then in fair Weather, towards the Beginning of *March*, if your Hops be weak, begin to dress them, but if your Hops be strong and in Heart, the middle or latter End of *March* will be the best Time, for late Dressing restrains their too early springing, which is the cause of many Injuries to the Hop ; the Manner of Dressing is this : Having with an Iron Picker clear'd away all the Earth out of the Hills, so as to make the Stock bare to the principal Roots, with a sharp Knife cut away all the Shoots which grew up with Binds the last Year, and also all the young Suckers, that none be left to run in the Alleys, and weaken the Hill ; cut them as close as you can to the old Root ; but to a weak Hop some part of the new Shoot may be left at Dressing. By no means cut the Tap-Roots that run out downward, the Roots that run outward from the Sides of the Plant, are only to be cut, because they will else incumber the Ground ; the old Roots are red, and the young white, and so are easily distinguished. Be careful not to hurt the old Roots, but cut away all the new, and lay by such of them as you intend to make new Sets of to plant out ; if there are any wild or Female Hops, take up the whole Hill, and new plant it.

When the Hop has been long planted, it is advis'd to cut one part of the Stock lower than the other, and the following Year to cut that part low, which before you left highest, which will make them spring with more Vigour.

When you have thus pruned the Roots, apply some rich Mould or Manure to them, and make not the Hills too high at first, lest you hinder the Growth of the young Shoots ; and though the Hops are springing out of the Hill, before you begin to dress them, yet you need not fear to cut off the Roots.

Keep all Poultry, especially Geese, out of your Hop-Garden in the Spring, because they are apt to devour the young Sprouts.

If

If your Hops are old or worn out of Heart, then in the Beginning of Winter, or at farthest in *January* or *February*, if the Weather be open, dig about them, and take away as much of the old barren Earth as you can, and apply good fat Mould or Compost to their Roots; such Winter-Dressing will recover your Hops, and destroy the Weeds.

C H A P. XI.

Poling of Hops.

WHEN you have dress'd your Hops, the next thing to be done is to pole them; In the first Year of planting, Poles are not requir'd, you need only twist the Binds together into a Knot on the Top of the Hill about the End of *May*, and let them lie so all the Season; but some think it better to give them short Poles, or Sticks of 4 or 5 Feet long.

The second Year provide Poles of 10 or 12 Feet long, and no more; but the third Year, Hops come to their full bearing State, and then require Poles of full Size. If the Ground be rich, and the Hop vigorous, provide large Poles, from 16 to 24 Feet or longer, or else you will lose the best part of the Profit for want of Poles.

If the Hop be weak, and the Ground not rich, provide Poles from 14 to 18 Feet long, and not longer, lest you impoverish the Root; for the Hop will soon run it self out of Heart if over-pol'd, and there is more Danger in over-poling than in underpoling. Nor can you expect a Crop from an overpol'd Ground; for the Branches which bear the Hops, grow very little till the Binds have over-reach'd the Poles, which when the Pole is too long, they cannot do. Two small Poles are sufficient for a young Ground.

Three Poles to a Hill is the Number generally made use of; if the Hills are large, and distant from one another,

another, put four Poles to them; if the Hills are small and near, two may do. In dry hungry Ground the Poles may stand nearer than in rich mellow Ground, where the Hops are subject to grow large and hawmy.

Before you begin to pole, disperse your Poles among the Hills, three to a Hill, taking care to put the larger Poles to such Hills where the Hops appear most vigorous, and begin not to pole, till the young Sprouts appear 8 or 12 Inches above Ground, which will be about the Middle of *April*, or fourteen Days after Dressing in rich Land; at which time you may discern where the biggest Poles are requir'd, and continue poling till the Sprouts are 2 Feet or more in Height. But stay not too long, lest you prejudice the Hop, which will not grow well, unless it has a Pole or something else to climb upon. And if the Binds are suffer'd to grow so long as to fall into the Alleys, they will be apt to entangle with one another, and not so readily take to the Pole after.

For the better fixing the Poles in the Hills, make holes in the Ground with an Iron square Crow, which ends in a sharp Point with 3 or 4 Sides, of the same Shape as the But-ends of your Poles are to be, or make use of a long wooden Dibble fac'd in like manner at the Point with Iron. This Instrument should be about 3 Feet long, and not altogether so large as the Poles, that the Poles may take the better hold: the Top of the Instrument should be like that of a Spade, furnish'd either with an Eye-Handle, or a Crutch, that the Workman may the better force it into the Ground.

There is no certain Depth to fix the Poles in the ground at; this varies according to the height of the Pole, the Stiffness of the Ground, and Exposure to the Wind: high Poles, a loose Soil, and a great Exposure, require them to be put deeper; but this Rule shou'd be observ'd, that the Pole be fastened so deep and so well, that it shall rather break than rise; the usual Depth is about a Foot and a half. Make

Make the Holes about a Foot from the Center of the Hill, or 3 Inches from the main Root, taking special care not to hurt the Root of the Hop, or any of the young Sprouts. Make 3 Holes in each Hill, one to the *East*, another to the *North*, and a third to the *West*-side of it, that all the Hops may better receive the *South*-Sun. When you have made the Holes, then force the Poles into them, driving them down with a quick Motion, and place them as perpendicular as you can, or rather leaning a little outward one from another, with all their bending Tops turn'd outward from the Hill; to prevent the entangling of the Vines; a leaning Pole commonly bears most Hops, but it is more apt to be blown down, than an upright one.

When you have erected your Poles, then ram the Earth on the outside of the Poles with a Rammer, for its greater Security against the Wind; but by no means ram within-sides the Poles, for fear of bruising the Shoots. This Rammer may be made of a piece of Wood of about four Foot long, and three Inches thick at bottom.

Have always some spare Poles in reserve to support the Vines, in case any Poles break or be overburthen'd; for if they are suffer'd to lie on the Ground, they soon perish.

If after some Time of growing you find a Hop under-pole'd, you may place a taller Pole near it, and bring the Hop from one Pole to another.

It is adviseable to place the strongest and largest Poles you have in the 3 or 4 outermost Rows of your Plantation, especially on the *West* and *South-west* Sides; they will stand better against Stormy Winds, and protect the Inside of the Plantation from their Violence.

In dressing and forming the Poles, cut about a Foot or more of the But-end with 3 Sides sloping to a Point; this square cutting better prevents their shaking the Ground. Poles of *Alder*, *Birch*, *Poplar*, *Abele*, or *Sallow* are easiest and soonest rais'd, and do well in low
Hop.

Hop-Grounds; but then they are brittle, apt to break, and soon rot, and at best last not above four Years.

The Bark of *Alder* and *Birch* is thought to help the climbing of the Hop; but being apt to crack, it soon receives and soaks the Wet, and rots the Pole: for this Reason, some that use them, are at the trouble to strip off the Bark.

But the Poles generally approv'd and made use of in *England*, are those of *Ash*, which are tough and strong, and last 6 or 7 Years. Poles of *Willow* are also in esteem, and those of *Chestnut* are most durable.

C H A P. XII.

Tying of Hops.

WHEN the Poles are set as above directed, and the Vines are grown two or three Feet high, such of them which have not taken to Poles of themselves, shou'd be guided by the Hand to such Poles as are nearest, and have fewest Hops; the strongest Vines always to the tallest Poles, two strong or three weak Binds being sufficient for a Pole: Wind them about the Poles at an equal Distance, according to the Course of the Sun, which they always follow, and bind them with wither'd Rushes or woollen Yarn; but not so close as to hinder their climbing up the Pole, for if you bind them hard, they will wither: two or three Strings or Binding to each Pole is sufficient. Thus continue to do, till all the Poles are furnish'd with Vines. Be cautious of breaking the tender Shoots, which are more tender and brittle in the Morning than in the Heat of the Day, and for this reason employ Women to tie your Hops; and when they have begun to take to and twine round the Poles, then cut off all the other weak Vines close to the

the Hill ; it being suppos'd that you have preserv'd the strongest Vines for the Poles.

During the Months of *April* and *May*, Hops should be constantly tended, to guide them to their Poles; and if the Vines are not able to support and keep themselves to the Pole, give them a second tying as high as you can reach: and when the Vines are grown beyond the reach of your hand, if they forsake the Poles, a fork'd Stick, or a Ladder with a Stay to the Back, will be useful to tie them up again; if the Vines be strong, and much over-grow the Pole, some advise to strike off their Heads with a long Switch, to encrease their branching below.

About Midsummer, or a little after, the Hops leave off running up at length, and begin to branch: such as do not, it may be convenient to strike off the Top with a Switch, or divert it from the Pole, that it may branch the better; which is much more for the Benefit of the Hop, than its running it self out at length.

Some say, that if the Top or Bud of a Vine happens to break off, it will run no farther, but a new Shoot will spring from the next Knot; and if carefully manag'd, will take to the Pole, and run to the Head, and bear Hops.

C H A P. XIII.

Summer-dressing and Hilling

HAVING dress'd, poled, and tyed your Hops, as above mention'd, then some time in *May*, especially after Rain, give the Ground the Summer digging, or at least pare off the Surface of the Earth with a Spade, Hoe, or Breast-plow, and with a Shovel throw some of the fine Earth on the Hills, and enlarge their Breadth, cutting away and burying all superfluous Roots of Hops, and Weeds, you find

on the Hills or Alleys, by which means you will hinder the Weeds from impoverishing your Hops, and keep your Hills moist ; by no means make up and finish your Hills all at once, but by Degrees and at different Times. You are suppos'd and expected to hoe from Time to Time the Weeds which grow on the Hills and in the Alleys, and at such Times of hoeing, which may be two or three times in the Summer, throw up constantly some of the Parings and fine Earth on the Hills, especially after Rain, which will better nourish the Roots, and keep the Hills loose, open and moist. Though it be a general Rule, whenever you weed the Hills, or hoe or pare the Alleys, to cast some fine Mould on the Hills, yet this admits of an Exception ; for when you find the Vines very vigorous and full of Sap, you must forbear giving them any more Earth, for Excess of Nourishment will make them run too much to Stalk, and hinder their branching and running into Bells and Hops ; you may at any Time add to the Sap by enriching the Hills, but cannot withdraw it at pleasure.

The fewer Weeds you have in your Ground, the more Hops you will have on your Poles ; therefore suffer no Weed to seed on the Hop-Ground.

The common Size for Hills, when they are fully compleated, is somewhat more than 2 Feet broad, and about a Foot and a half high ; in low, moist or rich Grounds, the Hills shou'd be higher and larger, but in dry, shallow, higher Grounds, they are made small ; the higher Hills produce large Roots and Binds, and better Sets.

In *August*, when the Hops begin to be in Bell, with a Hoe or sharp Shovel pare all the Alleys clean from Weeds, and throw the lightest of the Earth on the Tops of the Hills, so as to make them as large as a Bushel, but throw no Weeds on, nor cut any of the Binds with the Shovel. At the same Time, or rather before, Women shou'd be employ'd to strip the
the

the Leaves from the Vines 2 or 3 Feet above Ground, which will give the Hop more Air and Sun, and help the ripening thereof.

C H A P. XIV.

Watering of Hops.

HOPS suffer, and are greatly check'd in their Growth by a very dry Spring, especially in hot and dry Grounds : in such Case it would be a great Advantage to the Hop, if at that time, and in a dry Summer also, when the Hop is branching, or in Blossom, you had the Command of a Stream to give them a thorough Watering ; flowing the Alleys with such Water, will be sufficient, provided you throw the Parings on the Hills immediately. If you have no such Stream at Command, yet if the Season continues very dry, and the Hops are like to fail on that account, it will be worth your while, if you can get Water from Pits, Ponds, Springs, or a Rivulet at a small Distance, to bring Water in Hogsheads to your Hop-Ground, and pour a Pail full of Water into each Hill, first making a Hole with a Stick or Iron Crow in the middle of the Hill, into which pour your Water by degrees, till the Hill be well soak'd ; and if the Weather still continues dry in Summer, repeat this watering 2 or 3 times in the Season, and be sure after each watering to throw some of the Parings of your Alleys on your Hills, to keep them cool and moist.

This Sort of watering may be thought to be too troublesome and expensive; but when we consider, that 2 or 3 such Waterings, if the Hills be thoroughly soak'd, may make the Hops flourish in a dry Summer, when all your Neighbours fail ; and that an Acre of good Hops in a failing Year may be worth 60, 80, or 100 *l* and more, you ought not to spare your self

the Trouble of such watering, which after all is but a trifling Expence ; for if your Hills be 8 Feet distant from one another, there will be 1100 Hills on an Acre ; if 7 Feet distant, there will be about 1400 ; and even in the last Case, allowing 4 Gallons of Water to each Hill, the 1400 Hills will require but 90 Hogsheds. This number of Hogsheds may be brought to your Ground from a moderate distance, by a Man and a Horse, in 3 or 4 Days, at the Expence of about a Crown for each watering ; and by the means of so small an Expence, instead of having little or no Hops at all, and losing all your Expences, you may come to have the most beneficial Crop, not only by the Quantity of your Hops, but by the advanc'd Price they will of course bear in such a Season. If you infuse Pigeon or Sheeps-Dung or other Manure in your Water, it will better nourish the Plants.

Tho' it must be own'd, that in this Country we very seldom suffer by dry Summers, and the watering of Hop-grounds may in a great measure be sav'd by frequent dressing, and making the Hills large. But in great Droughts, watering is of great use.

C H A P. XV.

Picking or Pulling of Hops.

ABOUT the latter End of *July*, Hops begin to blow or blossom, and about the Beginning of *August*, they bell, and are sometimes ripe in forward Years, at the End of *August* or Beginning of *September* ; but generally they are ripe in *Ireland* about the middle or latter End of *September*.

At such Time as the Hops begin to change Colour, or are easily pull'd to pieces, and smell fragrantly, and the Seed begins to look brown and grows hard, you may conclude them ripe ; then pick them with all the expedition you can, for a Storm of Wind will do them great mischief at this Time, by breaking off the

the Branches, and by bruising and discolouring the Hops : and 'tis well known, that Hops pick'd green and bright, will sell for a third part more than those that are discolour'd and brown.

Before you begin to pull up the Poles, cut the Vines about 3 or 4 Feet from the Ground, for if you shou'd cut them near the Hills, especially when the Hops are green, it wou'd occasion an excessive flowing of the Sap, and thereby weaken and hurt the Root.

If the Poles stick so fast in the Ground that you cannot raise them without great Difficulty and Hazard of breaking them, then make use of an Instrument call'd a *Dog*, (which, together with some others contrived for the same Purpose, shall be described in the End of this Chapter) by the help of which you may easily raise them.

The most convenient way of picking Hops, is to make use of a long square *Frame*, by some call'd a *Bin*, for that purpose. This Frame is made of two Poles or Pieces of Wood, nine or ten Feet long each, and 3 or 4 Inches thick, joined together about a Foot and a half from each End by two other pieces three Feet long each, and supported by four Legs three Feet and a half high; so there will remain a Space in the Middle of the Frame six Feet long, three wide, and three and a half deep. In this Space fix a coarse linen Cloth or Hop-bag cut open on one side, and let it lie hollow, hanging either by Tenter-Hooks within-side the Frame, or stitch'd on the Out-side with wooden Skewers, in order to receive the Hops as they are pick'd. Three Men or Women, or four Boys or Girls, may stand on each side the Frame at work, and may pick two Poles at a time.

When you have rais'd some Poles, bring them with the Hops and Vines on them, and lay them on the Sides of the Frame, or erect a forked Prop at each End of the Frame, upon which the Poles may be laid

laid across over the Frame, in order to be pick'd. There is no occasion of stripping the Vines or Hawm from off the Poles before they are pick'd; the Workman who raises the Poles, generally carries them to the Frames, and the Frame being light, may be easily remov'd from one part of the Hop-Ground to the other.

The ripest Hops ought to be first pick'd; but if the Hops appear to be equally ripe in all parts of the Plantation, begin to pick them on the *East* or *North*-side of the Ground, which will prevent the *South-west* Wind from breaking into the Garden.

Having chosen a Plat of Ground which contains 11 Hills, place the Frame upon the Hill which is in the Center; and having pick'd them, remove the Frame into another piece of Ground of the same Extent, and so go on till you have finish'd the Whole.

Pick the Hops as clean from Leaves and Stalks as possibly you can, else they will damage you more in the Sale than they will advantage you in the Weight. Two or three times a Day empty the Frame into a large Cloath made of coarse Linen, and stitching it up with Skewers, carry it immediately to the Kiln to be dry'd; for if the Hops lie long in the Frame or Cloth, they will sweat and be discolour'd.

If you meet with any brown Hops in picking, take care to put them in a Basket by themselves.

If the Weather be very hot, or rainy, cut no more Hops than may be pick'd in an hour; and if possible, chuse to gather them in fair Weather, when the Hops are dry, which will save some Expence of Coals, and will better preserve their Colour when they are dry'd. Do not gather Hops when the Dew is on them, otherwise they will be come mouldy.

When you have taken the Poles from the Hills, twist the Ends of the Binds together, that they may not get among Peoples Legs, and hinder their Work.

Before you draw your Poles, if you find that the Hops of one Pole entangle above with the Hops of another,

another, cut them asunder with a sharp Hook, fix'd at the End of a long Pole.

If your Garden be large, it may be worth while to raise a Shed in the midst of it, to shelter the Pickers and Hops from Sun and Rain; and to lay Hops in over Night, to be pick'd early next Morning before the Dew is off the other Hops. This Shed will also serve for preserving your Poles in Winter. Let not the Hops be wet when you gather them, but if Dew or Rain be on them, shake the Pole, and they will dry the sooner. If your Hops be over-ripe, they will shed their Seed, wherein consists the chief Strength of the Hop; neither will they look so green, but somewhat brown, which much diminisheth the Value of them: therefore 'tis better to pull Hops a little before they are ripe, than to wait till they are full ripe: four Pounds of undry'd Hops, tho rough-ripe, will make one of dry; and five Pounds of Hops scarcely ripe, yet in their Prime, make but one Pound of dry'd Hops.

There are two sorts of Hops, the Green and the Brown; the first yields the best Colour by much when they are dry'd, and the other bears a greater Quantity of Hops.

Brown Hops make brown Ale, and Green Hops make the pale Ale, which is the reason why the latter is more esteem'd.

As fast as you pick your Hops, dry them on a Kiln, otherwise they will change Colour: but if you cannot immediately dry them, and must keep them, spread them on some Floor, not too thick, and by that means the Damage they will receive in a Day or two will not be great.

They who have five or six Acres of Hops, may employ ten Frames at a time in picking.

There is a particular sort of Hop, call'd the Early or Rath Hop, which is a Week or ten Days sooner ripe than any other Hop; they are also in Blossom sooner, and it is adviseable to mark such Hills at the Blossoming Season, by fixing some Sticks in them, and
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you must take care to watch them at their time of ripening, and pull them about a Week or ten Days before the others. If you omit this till all are ripe, then this sort will be over-ripe, and will shed its Seed, and look brown ; and thereby not only be bad its self, but spoil the Sale of any other it is mixt with ; and in regard there is a good deal of Trouble in pulling up such Hops, when they stand scattered in a Plantation, and in carrying them a great way to a convenient Place to be pick'd, therefore some root them quite out of their Plantations, or set them in a particular Quarter by themselves.

I shall now give the Figures and Descriptions of such Instruments, as are made use of for raising Hop-poles, and shew the manner of using them.

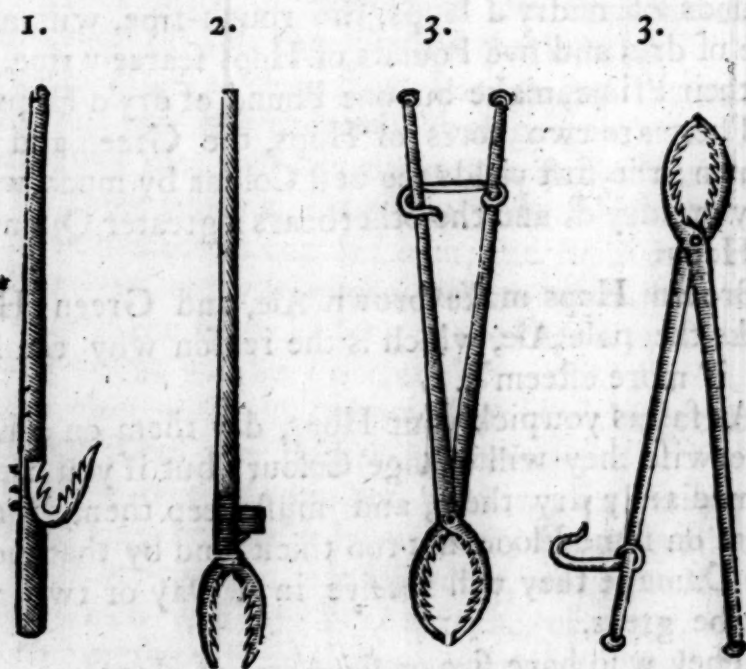


Figure 1. Is an Instrument call'd a *Dog*, and made of a round piece of Wood about 6 or 7 Feet long, and 3 or 4 Inches thick ; within a Foot or Foot and a half of the Bottom of it, there is fix'd an Iron Fork with Teeth

Teeth on the Insides, fastened with Screws to the Wood ; one side of the Fork is about 9 or 10 Inches long, and the other 12, an Inch broad, and 3 quarters of an Inch thick : the Fork is about 5 Inches wide at the upper part, and an Inch and half at the lower.

When you make use of this Instrument, strike the forked piece of Iron into the side of the Pole, and resting the lower End of the Instrument on the Hill, whilst you pull the Pole to you with your left hand, you may with the Strength of your right hand easily raise it up. There is a slight in raising Poles with this Instrument, which a little Practice will soon bring one to ; and because it is the cheapest, handiest, and most expeditious Instrument for raising Poles, and may be managed by one Man only, it is therefore in general Use, and preferred to all others.

Figure 2. Is an Instrument made of a piece of Wood 6 or 8 Feet long, in the nature of a Lever, arm'd at the End with a forked piece of Iron, with Teeth in the Jaws of it ; and for the more convenient using of it, it is furnished with a wooden prop, bound on with a strap of Iron, to rest the Lever upon, when you fix the Teeth into the sides of the Pole, in order to raise it.

Figure 3. Is an Instrument like a pair of Smith's Tongs or Pincers, and is made of Iron, about 3 or 4 Feet long, whereof six or seven Inches are allow'd to the Mouth or Jaws, which ought to be strong, and furnished with Teeth to take fast hold of the Pole ; it will be convenient to put a riding Hook on the Handles, to keep them fast together, when you have got a good hold of the Pole. When you use this Instrument, lay a little square Block on the Top of the Hill, with a Handle to it, for the better removing it from one Hill to another : and after you have clasped the lowest part of the Pole with the Jaws, and drawn the Handles as close as you can together, with the help of the Riding-hook, rest the Joint of the

Pincers on the Block : then pulling the Pole towards you, at the same time press down the Handles with all your Strength, and you will easily weigh up the Pole. You may apply wooden Handles of six Feet long each, instead of Iron Handles to this Instrument, which will make it come cheaper and serve better for Use.

C H A P. XVI.

Drying of Hops.

GREAT care ought to be taken, that your Hops be thoroughly and evenly dry'd: in this lies the greatest Difficulty and Art in the Management of Hops ; for if they are over-dry'd, they will change Colour, look brown, and be judged to be burnt, and so lose their esteem ; and if they be undry'd, they will also lose their Colour and Flavour. And it has been found, that a handful of under-dry'd Hops has spoil'd many Pounds of other Hops, by taking away their pleasant Smell and Colour.

The best way of drying Hops is with a Charcoal-Fire, on a Kiln cover'd with Hair-cloth, of the same Form and Fashion which is us'd for drying of Malt. In such Parts of *England*, where Hops grow, and a great deal of Malt is made, Hops are generally dried on the ordinary Malt-Kilns ; but where the Hop-Planters have much greater Quantity of Hops than can be dried in due time on their Malt-Kilns, (for Hops ought to be dry'd as soon as possible after they are pick'd) they build several small Kilns on purpose for drying of Hops, and the Building is contriv'd in such Manner and Form, as shall be describ'd at the End of this Chapter.

In drying of Hops, first lay the Hair-cloth very even on the Bed or Floor of the Kiln, and spread the green Hops thereon, about six Inches thick, laying them

them with a Rake as smooth and even as possible, not thicker in one place than another. Let the Kiln be first warm'd with a Fire, before you lay on the Hops; then keep on an even and steady Fire under them, not too fierce at first, lest you scorch them; and let not the Fire sink and slacken, but rather increase, till the Hops be near dry'd, lest the Moisture or Sweat, which the Fire has rais'd, fall back and discolour the Hops. After they have thus lain about 7, 8, or 9 hours, and left off sweating, and leap up when beaten with a Stick; then turn them upside down with a broad Malt-Shovel, or Scoop made for that purpose, or cast them up into a heap in the Middle, and then spread them equally on all sides, and thus let them lie for 2 or 3 hours more, till every Hop, if possible, be thoroughly dried; and then with the Hair-cloth remove them to the Heap, where they are to lie till they are bagg'd.

Keep your Fire at a constant Heat, and only at the Mouth of the Furnace, for the Air will sufficiently disperse the Heat to all parts of the Kiln. If the Hops do not dry in one place as much as in the rest, which you may perceive by touching them with a Stick or Wand, and observing whether they rattle or no, then make them thinner in such places where they do not rattle so much.

Hops are then fully dry'd, when the inner Stalks are brittle and break short upon being rubb'd, and when the Hop-leaves easily fall off, and feel very crisp; when you find them to crackle and leap a little, as they will do upon bursting of the Seeds, then 'tis time to take them off the Kiln.

If Wood or Turf be used for Fewel in drying, they ought to be charr'd first, for Smoak spoils the Colour and Smell of Hops.

Char-Coal made of old rotten Poles is commonly made use of for this purpose. Cinders of Sea-Coal is very good, and 'tis found by Experience that *Kilken-*

ny Coal dries Hops very well, because it does not smoak, and gives a constant uniform Heat for a long time : but great Caution shou'd be us'd, that the Fire be not too hot and scorching ; for in such Case the Hops will be burnt, and lose their Colour and Value. The Fire ought to be gentle and of a due Heat, and in order that it may be constantly the same, neither too strong nor too weak, it may be of service to make use of a *Thermometer* ; this Instrument has a long slender hollow Glass-Tube, with a round Ball at bottom, clos'd at both Ends, quite empty of Air, but partly fill'd with Spirit of Wine ting'd ; which Liquor rises or falls in the Tube, in proportion as the outward Air is either hot or cold.

When you have once found out the Degree of Heat which is proper for drying of Hops, and mark'd it on the *Thermometer*, you may always after know how to regulate your Fire with great Exactness ; for putting the *Thermometer* within-side the Kiln for some short time, you may observe by the height of the Liquor when the Heat is come to a right pitch, and when it is either too high or low, and so increase or slacken the Fire. Any Servant may, with help of this Instrument, be able to mend and correct the Fire with great Certainty, and not be liable to commit Mistakes in the drying of Hops, which often prove so fatal.

When you have begun to dry your Hops, lose no time in that Work, but employ Men Day and Night to attend them with the utmost Care, till all be dried.

There is no certain Time for drying Hops on the Kiln ; for if they are laid thick, or very moist or wet on the Hair-cloth, or if the upper Floor of the Kiln be placed higher or more distant than ordinary from the Fire-Place, they will take the longer time in drying,

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This farther Caution should be observ'd in the drying of Hops, to keep every place about the Kiln so well closed up, that no Wind or Air may be suffer'd to come in at any Door, Window, or other Place; for if Wind blows on the Mouth of the Furnace, it will make the Fire too violent, and if cool Air be let in on the Hops while they are drying and in a Sweat, it would drive back the Steam and Sweat, and by that means discolour the Hops.

If you turn Hops while they sweat, they will burn and lose their Colour. Before you turn them, keep the Fire low; and after they are turn'd, refresh the Fire again.

Some have propos'd, as an Improvement, to cover the Floor of the Kiln with double Tin-plates; by which Contrivance, they say, the Hops will be less injur'd in turning than on an Hair-Cloth, where they are apt to shed their Seed upon being turn'd; and any Eewel will serve, the Smoak being carry'd off another way. And in order to avoid any Occasion of turning the Hops at all, it is farther propos'd to provide a Frame of Wood cover'd with Tin-Plates as broad as the Top of the Kiln, and so contriv'd as to let down within a Foot of the Hops more or less, at the time they are ready to turn, which like a *Rerverberatory* will reflect the Heat back on the Top of the Hops, by which means the Hops on the Top will be as soon dry'd as those at the Bottom. But these Tin Contrivances, though they have been long known and spoke of, yet are seldom or ever used, the general Practice being to dry on Hair-Cloths.

It is observ'd, that Hops dry'd in the Sun lose their Richness of Flavour, as other Herbs do that are dry'd that way.

If Hops are laid on a Floor to dry, without using a Fire, they will lose their Strength, will be apt to sweat or ferment upon Change of Weather, and will not be fit for packing. Fire exhales the watery parts,
and

and retains the oily, and thereby preserves the Flavour and Colour. Where Kilns are made 8 Feet square, a large Malt-shovel full of Char-Coal thrown into the Mouth of the Furnace, will last an hour.

When the Hops are dry'd on the Kiln, remove them immediately into a close Store-Room, and lay them there in heaps, to sweat for three or four Days or more, in which time they will grow tough, and feel moist to the hand: for if you shou'd attempt to bag them immediately from the Kiln, they wou'd all break to Powder, but if they lie a while close cover'd with Blankets from the Air, they will bag the better.

I shall now describe the Form of such Kilns as are made on purpose for drying of Hops, when the Quantity of them is too large to be dry'd in due time on Malt-Kilns.

Suppose a Hop-planter has eight or ten *English* Acres of Hop-Ground, he will then have occasion for a Building of about 60 Feet long, and 15 Feet wide in the Clear; at one End of the Building, there is to be a boarded Room for receiving the Green Hops which are brought from the Hop-Ground, and where they should be spread and lie till there is room on the Kilns for drying them; at the other End of the Building, let there be another large boarded Room, for receiving the Hops from the Kiln when they are dry'd, and where they may lie in heaps to sweat till they are fit for Bagging. In the intermediate part of the Building, 3 or 4 Kilns of 8 or 10 Feet square each, may be made close to one another in the following Manner.

Suppose the middle Building to be 28 Feet long, and 15 Feet wide, then there will be room for 3 Kilns of 8 Feet square each in the Clear, and for their respective Walls; these Kilns should lie in a Line along the Back-Wall, and will come forward above 9 Feet, and then there will remain a Passage of 5 Feet wide and 28 long at the Front of the Kilns.

Each

Each Kiln is thus form'd and made; build the Walls of Brick 9 Inches thick, and let each of the four Sides be eight Feet long in the Clear, and seven Feet high: the principal parts of the Kiln are the Bed or Floor in the upper part, whereon the Hops are laid to be dry'd, and the Furnace, Steddle or Lanthorn for the Fire in the lower part. The Bed or Floor in a Kiln of 8 Foot square, should be about 6 Feet from the lower Floor, so that it will be a Foot lower than the upper part of the Wall; this Foot of Wall rising above the Bed, serves to keep in the Hops on the Kiln, and for Men to walk upon round about the Kiln, to look to the drying of the Hops. This Bed or Floor may be made of Wooden Rails an Inch square, laid very even and level into a cross Beam a quarter of an Inch asunder; or if the Kiln be arch'd below, the Floor may be laid with long Bricks or Stones, resting on the Tops of the Arches, at about 2 Inches distance from one another.

In making the lower part of the Kiln, place the Mouth of the Furnace at the Bottom in the Middle of the Front Wall of the Kiln, 14 Inches wide and sixteen high; joining to the Mouth of the Furnace on the Inside, build the Steddle or Lanthorn of Brick four Inches thick: this Lanthorn should be 14 or 16 Inches wide, three Feet perpendicular in the side Walls, and reach from the Front Wall of the Kiln to within a Foot and a half of the Back Wall, leaving room for a Man to pass between the Lanthorn and Back Wall, so that it will be about six Feet long. On the side-Walls, Bricks of a Foot length are to be rais'd on their Ends, leaning to and bearing upon one another, so as to form a sort of an Arch a-top, or like the Roof of a House; or the upper part may be duely arch'd. See *fig. 4.*

In building the sideWalls of the Lanthorn, after you have laid the two first Rows of Brick, then in the three or four Rows following, at the End of every
Brick

Brick leave an open space or hole, four or five Inches wide, Chequer-wise, both on the Sides and Back-part, and lay the highest Row or two of Bricks without any holes, for the better support of the arched Roof; so there will be 3 or 4 Rows of holes, which are designed to convey the Heat equally to all parts under the Hair-Cloth. The atched Roof shou'd be well plaistered within-side with Hair and Lime, to reflect the Heat the better.

On the Front-part of the Kiln, on one side of the Furnace, a small Door shou'd be made 2 Feet from the Ground, three Feet high and two wide, so that a Man may easily get in, to set every thing to rights about the Steddle. A pair of Stairs should also be made to go to the upper Floor, where the Hops are dryed; and as you have a Passage below, 5 Feet wide along the Front of the Kilns, so you will have the like Passage directly over-head in the upper Floor, which will be of use for bringing the green Hops from one Room, and laying them on the Kiln, and for carrying them when dryed to your Store-Room; both which Rooms for greater Conveniency should be on the same Floor with the upper part of the Kiln.

This farther Caution shou'd be used, that no holes be made within a Foot of the Fire-place or Mouth of the Furnace, and that all parts about the Kiln be made so close, that no Air may possibly get in. The further End of the Steddle should be built of Brick up to the Top, with holes in it as in the Sides.

The Kiln ought to be square, and may be of ten, twelve or fourteen Feet over at the Top; but there ought to be a due Proportion between the Height and Breadth of the Kiln, and the Bigness of the Steddle where the Fire is kept, viz. if the Kiln be twelve Feet square on the Top, it ought to be nine Feet high from the Fire, and the Steddle ought to be six Feet and a half square, and so proportionable in other Dimensions. These Kilns are made at a small Expence.

CHAP.

C H A P. XVII.

Bagging of Hops.

HOPS break all to Powder if they are bagg'd hot from the Kiln, to prevent which they shou'd be lay'd in a heap to sweat and grow tough : There is no certain time for their sweating, that varies according to the Weather ; 3 or 4 Days are commonly sufficient, sometimes many more Days are requir'd ; but this is a certain Rule, that when you find the Hops feel moist and clammy, and that they can be squeezed in your hand or trodden close without breaking, then they are fit for Bagging ; and the harder they are trodden, the better they will keep.

Bags in which Hops are pack'd up, are made of coarse Linnen Cloth, four Ells and a half of that which is Ell-wide ; or between eleven and twelve Yards of that which is three Quarters wide, will make a Bag to contain two hundred and a half, or two hundred and a quarter Weight. These Bags are about eleven Feet long, and near two Yards and a half round ; small Bags, call'd Pockets, contain about half the aforesaid Weight : The thicker and closer the Bag is, the better it will keep the Hops.

The manner of bagging is this : Make a round or square Hole (but the round is more convenient) about two Feet and two Inches over, in the Floor of the Chamber, where the Hops are laid in heaps, large enough to receive the Bag, and for a Man to go with Ease up and down ; and with a Piece of Packthread tye a handful of Hops in each lower Corner of the Bag, to serve as handles for the easy lifting or removing the Bag ; and with Packthread fasten the Mouth of the Bag to a Hoop something larger
H than

than the Mouth of the Hole, that the Hoop may rest on the Edges of it, and strong enough to bear the Weight of the Hops when the Bag is full, and of the Man that treads them. The upper part of the Bag being thus fix'd by the Hoop, let the Bag down thorough the Hole, not so near to the lower Floor, but that it may have Liberty to hang free without touching the Ground ; then throw in a Bushel or two of Hops, and let the Man go into the Bag, and tread the Hops on every side, with such Shoes as have no Heels, as hard as he can till they lie close ; let another Man or Boy still cast in more Hops into the Bag. When the former parcels are well trodden, continue the same Work till the Bag be full ; when that is donē, let down the Bag by untying the Hoop, and sew up the Mouth of the Bag as close as you can, observing at the same time to tie up some Hops in the upper Corners as you did before in the lower.

When the Hops are thus bagg'd, lay them not upon an earthen, but on a boarded Floor, and in a dry Place, for wet and moist Air will injure them much ; the harder the Hops are press'd, and the closer and thicker the Bag is, the longer will the Hops keep : but take care of Rats and Mice, which are apt to spoil Hops, not by eating them, but by making Nests and lodging in them.

Some in treading the Hops make use of a fifty pound Weight fasten'd to a Rope, and place it in the Middle of the Bag ; the Man in the Bag treads about it with his Feet, and lifts it up now and then, to press the Hops the closer together.

C H A P. XVIII.

Laying up and preserving Poles.

AS soon as the Hops are pick'd, strip off the Hawm or Vines from the Poles : then take care as your last Work, to preserve the Poles during the Winter,

Winter, which is done either by stacking, piling, or housing. The stacking is thus perform'd ; set up three Poles like an erect Triangle, or rather six Poles, let into the Ground with an Iron Crow, and plac'd round about, but inclining to one another so as to meet and be tyed fast together with Ropes of the Hawm, within a Yard of the Top. Against this Frame the Poles ought to be set up speedily, for if they be suffer'd to lie on the Ground, especially in wet Weather, they will receive more Damage in a Fortnight than by their standing out all the rest of the Year. When they are set up, about 300 to a Stack, bind them about with a little twisted Hawm to keep them together ; by which means the outward Poles only are subject to the Injuries of Weather, and keep all the inner Poles dry, except only the Tops of them, which, for the most part are expos'd to the Air, as are the Bottoms also to the moist Ground ; to prevent which, some cover the Tops of the Stacks with Hawm, and lay Stones, Bricks, or Sand at Bottom, to preserve the But-ends from rotting.

Many chuse to pile them up at length in several Places of the Hop-Ground, laying three or four old Poles athwart at Bottom to keep them from the moist Ground, and setting several Poles erect in the Ground on each side the Pile ; they then lay the Poles on one another, taking care that the smaller Ends may lie inwards, and the bigger outwards, on which account the Pile should be somewhat longer than the Poles. When the Pile is rais'd high enough, then with Ropes of Hawm bind the Poles that stand on the one side overthwart to the Poles on the other to keep them upright and steady, and cover them well with Hawm to defend them against Rain. This is a better way of preserving Poles than the former ; but the best way of all is to build a Shed or two in your Hop-Ground, which may serve as a Shelter for picking the Hops in Summer, and for preserving the Poles in Winter, and

will soon requite the Charge of building. This way of securing Poles is more necessary, not only to save them from the Damage they would receive by frequent Rains, and the great Moisture of our Air, but to preserve them from being stolen, which they would be very subject to, if they lay expos'd abroad. As soon as the Hawm or Binds are wither'd and dry, burn them and spread the Ashes on the Ground.

C H A P. XIX.

Manure and Tillage in Winter.

FROM *October* to *March* there is nothing to be done in the Hop-ground but to provide and bring Manure into it, and to give the Alleys a Winter's digging or plowing.

If you bring Dung into your Ground, before it be well rotted, and lay it on the Alleys to mix with the Earth, and not on the Hills, Dung being apt to produce Vermin, which are injurious to Hops; cold Dungs, such as Cows and Hogs Dung, are better for Hops than Horse-Dung, unless the Soil be cold and wet, and then hot Dung, such as Pigeons, will do well. You may let the Dung lie on the Alleys all the Winter till *February*, but then dig or plow it in; but it will be the better to dig or plow your Alleys in Winter, and then you need not do it in *February*.

If you prepare your Manure or Compost in some Place out of the Hop-ground, mix one part of Dung with two parts of good Mould, or make a Compost of Lime, Marle, strong Earth, and Scourings of Ditches and Dung for light Grounds; and a Compost of Sand, Ashes, Limestone, Gravel, to be mixt with some of the former Ingredients, for strong Ground: let them lie in heaps to incorporate together during the Winter, and in *February* bring this Compost to your Hop-Ground, and lay it on or near the Hills.

A small dunging every second Year is sufficient, and a plentiful dunging will serve for three Years, if the Soil be tolerably good.

Dung was formerly more in use than it is at present; and though it is now much used in several Places where Hops grow, yet this is because they have no other Manure: and 'tis not to be doubted but that Lime, Limestone Gravel, Sea-Sand, Marle, especially the shelly Marle, Ashes, and many other Manures and Composts, which may be had with Ease and Plenty in many Parts of the Kingdom, wou'd do better than Dung, and last much longer.

The Management of the Hop-Ground the third and every subsequent Year is the same; you must give it a Winter plowing or digging, and either lay Manure then on, or bring it on in Spring: and in the Beginning of Summer give it another plowing or digging, and several hoeings, both to destroy the Weeds, and to prepare Soil to lay on the Hills from time to time. So that the Hop-Gardens require a constant Care and Attendance, especially from the Beginning of *March* to the First of *October*: and you may lay this down as a certain Rule, that the more Pains you take, and the greater Expence you are at in the due Culture of the Ground and Management of the Hops, the greater Profit you will have.

C H A P. XX.

The Charge and Profit of Hop-Grounds.

HAVING already mentioned in general the Profit and Charge of Hop-Grounds, it may be proper to take notice in particular, of the Expence attending the several Articles in the Management of Hops.

The

The Charge of an Acre of Hop-Ground in some Parts of *England* is computed thus: 3 *l.* for the Husbandry, 4 *l.* for the Wear of Poles, 5 *l.* for picking and drying, 1 *l.* 10 *s.* for Dung, 1 *l.* for Rent, and 10 *s.* for Tythe; in all 15 *l.* a Year: and in some Places they pay 4 or 5 Pounds an Acre yearly for the Rent of the Land.

The Hop-Planters in *England* commonly agree with Hop-Dressers to do all the Husbandry Part for 3 *l.* to 3 *l.* 10 *s.* per Acre, which takes in the Summer and Winter Digging of the Ground, the pruning and dressing the Hops and Hills, the poling and tying, several hoeings, and making up the Hills from Time to Time; they laying the Dung on the Ground, and all other Work, except the bringing the Dung to the Ground, and the picking and drying the Hops, which Work is done by others. So that a Gentleman there has little Trouble with his Hop-Ground, he only takes care that the Undertaker does every Part of the Work in the proper time; and 'tis so much the Interest of the Undertaker to do so, that if he neglects hoeing, when the Weeds appear, he will by such Neglect greatly multiply his Trouble and Labour in rooting them out after.

An *English* Acre requires about 3000 Poles; the Price of Poles, various according to their Bigness. 'Tis usual in several Places to give as many Shillings for 100 Poles, as the Poles are Feet long; so for 100 Poles of 20 Feet long they give 20 *s.* but where Poles are in plenty, they give but 15 *s.* for such: 'tis computed that a recruit of 500 Poles yearly will keep an *English* Acre of Hop-Ground in constant Repair.

So that Poles are about a third Part of the yearly Charge, and picking and drying another third, and the rest is laid out in the managing of the Ground, &c.

The Summer and Winter Tillage of the Ground being chiefly design'd to destroy the Weeds, and to make

make the Ground fine and fit for the Nourishment of Hops, by often breaking and exposing it to the Sun, Frost and Rain; it is conceiv'd that hoe-plowing the ground will do this sufficiently, and much cheaper than it can be done by the Spade; for it may be hoe-plow'd 6 or 8 times, for the Expence of one Digging.

When we make mention of a Plow in the Tillage of Hop-Ground, we do not mean the common, large, heavy Plow, but a small, light, short Plow, sometimes call'd the Garden or Hoe-plow; such a Plow will plow or hoe 2 Acres of Ground in a Day with two Horses only, and needs no Coulter. The new-invented Patent-Plow lately brought from *England*, will do very well for this Purpose, and may be made much lighter and flighter for Hop-Grounds than for Corn-Land. The Hoe-Plow may also be drawn by Horses in a Shaft.

Some farther Observations on Hops.

WHEN Hop-Sets have been planted two Years, then in the Beginning of the third Year you may cut off Sets from the Roots, for planting new Ground, or supplying weak Hills in the same Ground.

If you find the Binds of any Hill weak and starvling, which might have been occasion'd by hurting the Root or other Mismanagement, plant new Sets in that Hill.

If a Blast happens, take off all the Leaves as far as you can reach.

It is of little use to weed the Hills by the hand, unless the Weeds are flower'd or seeded; because in raising the Hills, small Weeds will be buried.

Hops growing close to Hedges are more subject to Blights and Honey-Dews; therefore plant at some small distance from them, and make your Cart-roads close to the Hedges, and thorough the Middle of your

your Plantation, for the more convenient carrying Manure to all Parts of the Ground ; it is in these Walks they pick the early Hop. ,

The common Annoyances of Hops are the *Fen* or Mould in very wet Seasons ; and Honey-Dews and green Lice in dry Summers. As the Fen, Mould, or Moss is occasion'd by the Hops being over-charg'd with Rain in the Root, Leaves and Stalk, if the Weather continues wet and cold, the only help against this Distemper, is to keep the Ground as dry as possible, and to give the Hops all the Air and Sun you can, to make them perspire freely, and discharge the Moisture. And lest the Seeds or Roots of such Mould or Moss shou'd continue, and increase in the Ground, it is advis'd to burn all the Leaves and Stalks of such Hops which have been so infected.

Honey-Dews or Mil-Dews happen most in low Grounds lying near Water, and in Places which are close shelter'd ; this Dew appears like Honey on the Leaves, sweet and clammy ; and for want of a free Air lies long on the Leaves, and invites Insects and green Lice to feed on it, and to lodge and breed on the Leaves, which they intirely devour, and so ruin the Hop : for if the Leaves of a Tree are destroy'd, it cannot then draw Nourishment for the Fruit.

The best way to prevent this Evil, is to plant your Hops on an open rising Ground, and to take care that it be not too close shelter'd on the *West* or *South* sides, but that it may have free Air, and that the Hills be not set too near together.

But if the Honey-Dew should happen to fall on the Hops, and green Lice succeed and increase, the Hops will be in great danger of being ruin'd, unless reliev'd by Showers of Rain, which only can destroy those Vermin. It has sometimes happen'd, that when a Plantation has been almost devour'd and given over for lost, a seasonable fall of Rain has quite recover'd them and destroy'd the Lice : As a Relief in case of such

such Extremity, some recommend the use of a small watering Engine made at a small Expence, which casts Water 15 or 20 Yards all round; for the Water being forced up high in the Air, and falling down in the Form of Rain, will both relieve the Hops and kill the Vermin, by which means a Hop-Yard may be recover'd from Destruction in a short Time and at a small Expence.

Some advise, when a Plantation of Hops is first made, to plant Fruit-Trees in it at 40 Feet distance, because by the Time that the Ground is much worn out in raising Hops, which may be in 15 or 20 Years, the Fruit-Trees will be grown up to Perfection.

Directions for Raising Hop-Poles.

THE want of Poles is an Objection too often made against the planting of Hops; but this Objection will soon be remov'd, when we consider, that there is not any Part of this Kingdom, which is fit for raising Hops, but what is fit also for raising Hop-Poles of one Kind or other. Ground that lies low, wet, cold, marshy, boggy, or near Rivers, is fit for all the Aquatick Kind, such as *Poplars, Abeles, Alders, Willows, Oziers, and Sallows*, which will produce Hop-Poles in four or five Years time from their first planting; this sort of Land is often fit for nothing else, and yet will raise great Quantities of these sorts of Trees in a few Years, and at a small Expence.

If your Soil be dry and warm, or a strong mellow rich Loam, *Ash* and *Chestnut*, which make the best Poles for Hops, will thrive greatly therein, and be fit for Poles in 9 or 10 Years from their first planting. And if you plant them round your Hop-Ground, they will both shelter the Ground, and supply you with Poles, without any Expence of Carriage. *Elms* also are quick

quick Growers, and when planted close together, grow tall and straight, and make good Poles.

Asb and *Chesnut* Poles are tough and durable, and three sets of them will last twenty Years : but Poles of *Alder*, *Poplar*, *Abele*, *Oziers* or *Sallows* soon rot, or grow brittle, and are easily broke ; so that it will take 5 Sets of them at least to last 20 Years ; for this reason Poles of *Asb* are generally made use of in *England*. And though it is recommended to plant the Aquatick kinds for your first Supply, yet it is advis'd to make Plantations of *Asb* and *Chesnut*, to come in for the future Recruit of your Hop-Grounds.

If you begin with a quarter of an *Acre* to plant Hops in, this Quantity of Ground; will contain about 300 Hills, at the rate of 5 Sets or Plants to a Hill, will require 1500 Sets, which will be as many as you can conveniently furnish your self with from your Neighbours at your first setting out. These Sets in two Years after planting, and not sooner, will supply you with a new Stock of Sets sufficient to plant out an Acre or two, and from that Time forward you will have enough to stock many Plantations.

In the first Year after Planting you need no Poles at all, but twist all the Vines together in a Knot on the Top of the Hill, or give them Poles of four or five Feet long. The second Year, Poles of 10 or 12 Feet long will do, but the third Year and every Year following, Poles of sixteen Feet and upwards, according to the strength of your Ground, are necessary ; the quarter of an Acre you begin with, will take 900 such Poles, which you must procure as well as you can from your Neighbours, if you are not already provided. The Sets first planted in the Nursery of a quarter of an Acre, will in two Years furnish you with a Stock of Sets to plant a large Plantation ; and those Sets so planted out, will in two Years more require Poles of full size, so that in four Years time you may have a large Quantity of Hops grown up fit for
poling ;

poling ; and in that Time the *Alders*, *Poplars*, and *Abeles* which were planted when you first began your Nursery of Hops, will be grown large enough to serve your Occasions, and hold out till the *Aspen* Poles are fit for use ; so that the want of Poles will be no Delay, since you may be furnish'd with a stock of Poles as soon almost as you can have a Quantity of Hops fit for poling.

*How to Plant POPLARS, ABELES, AL-
DERS, &c. for Hop-Poles.*

IF the Ground, you design to plant *Alders*, *Poplars*, *Abeles*, *Willow*, *Oziers* or *Sallows* in, be very wet, and over-charg'd with Water, make Drains in it to carry off the super-abundant Water, and in the Beginning of Winter dig the whole Ground, suppose an Acre, as deep as you can, dividing it into Ridges of Beds six Feet wide, and make a small Trench of a Foot and a half wide and a Foot deep between each Bed. If this Ground will bear plowing well, you may save some Expence, but you will find that trenching with the Spade will make ample amends for the Charge, by the quicker and stronger Growth of the Trees. Your Ground being thus prepar'd, in *February* following set about planting. *Poplars* and *Abeles* are generally propagated from Suckers which ought to be planted as shallow as possible ; they may also be increas'd from large Cuttings or Truncheons, or Branches of the last Year's Growth. *Alders*, *Willow*, *Sallows* and *Oziers* are propagated from large Cuttings or Truncheons a Foot and half or two Feet long ; and the thicker they are, the better.

These Truncheons ought to be cut sloping at the Ends, and when you plant them, put them at 3 Feet distance from one another, and do not drive them down perpendicularly, but thrust them sloping into the

the Earth, leaving about 6 Inches above Ground. Take care not to bruise or strip the Bark in thrusting their Ends into the Earth ; and to prevent this in Ground that is stiff and hard, the best way is to make a Hole with an Iron Crow or Stick, and then thrust them in, and afterwards with fine Earth close up the Holes very firm about them : but if the Ground be loose, there will be no Occasion of making Holes with a Stick.

These Plantations should be kept clean from Weeds the first two Years by frequent hoeing, after which Time they themselves will keep down all Weeds. Take care in the Beginning of every Season to break or rub off all the Side-Buds or Shoots, which will make them grow taller and straiter. Preserve at first but one good leading Shoot, or two at most on those Truncheons, and in four or five Years they will be large enough to make Poles ; and when they are cut down, you may preserve five or six good Shoots on each Stock, and thin them as you find Occasion. Lay the Cuttings of *Alder* in Water for the space of two Days before you plant them, and cut Poles from these Trees either in *October* before Winter comes on, or in *February* when the Winter Colds are over.

How to Plant ASH and CHESNUT for Poles.

ASH thrives best in the richest Soil, and generally is rais'd from Seed (call'd Keys,) for *Asb-fuckers* have seldom good Roots, and do not grow with near that Vigour as those rais'd from Keys. These Keys are gather'd about the End of *November* when they begin to fall, or Beginning of *December*; and then should be either bury'd in a Hole in the Ground, placing a Layer of Keys and a Layer of Mould, *Stratum super Stratum*, till the Hole be full, where they are to continue till the *February* come Twelve-month after, and then should be taken up and sowed in Seed-Beds ; or they may at first be put into Seed-Beds, not too deep, but at the Depth of 2 Inches at most, but

but will not come up until the second Spring after sowing; during which time they should be carefully kept clean from Weeds, and water'd in very dry and hot Weather.

When the young *Ash* come up, you must keep them water'd during the Spring and Summer, if the Weather be dry, and constantly weed them; and in *October* following take them out of the Seed-Bed with a Trowel, to prevent their Roots from being strain'd in drawing, which causes them to perish after transplanting. When you remove them from the Seed-Bed to the Nursery-Ground, prune off their down-right or Tap-Roots, but not any of their Side-Roots: you must also preserve their Tops from the Knife and Bill at all times, excepting the second Year after transplanting, at which Time you must cut off their Heads within an Inch or two of the Ground, which will cause them the next Spring to shoot with great Vigour.

If the Seedlings are small at the End of the Year, 'tis best to let them remain in the Seed-Beds a Year or two longer, until they are large enough to transplant, which is when they are about the Bigness of a Tobacco-Pipe or Goose-Quill. Before you plant them in your Nursery-Ground, take care that such Ground be well dug, made fine, and clear'd from Weeds; then in the Beginning of Winter plant the Seedlings in straight Lines in Beds at a Foot distance every way from one another, leaving between every fourth and fifth Row an Alley of two Feet wide: They are to continue in this Nursery two or three Years at most, after which time they should be transplanted to such places where they are design'd to remain.

When you transplant from your Nursery, which is to be done in *October*, or in *February*, if you have slipt that Time, take care not to bruise or spoil the Roots; preserve as many of them as you can with some Earth about them, having some time before dug and prepar'd

prepar'd the Ground into which you design to transplant the *Ash*, and which ought to be a good Soil, and not wet, then set them at three or four Feet distance. If you plant them at three Feet distance, an *Irish* Acre will contain 7840 Plants; if at four Feet, 4410; if at five Feet, 2822 Plants. The first Year or two after transplanting, the Ground should be hoed and dug about them.

There is another Method of raising Coppices or Plantations of *Ash*, which is attended with less Charge and Trouble, and seldom fails of Success; 'tis this :

Make choice of very good Land, and give it a Summer's ploughing to mellow and to destroy the Roots of Weeds and Grass, especially Scutch-Grass. Prepare this Ground for Barley to be sown in the Spring, and at the same time that you sow your Barley, sow also *Ash*-Keys, not at all thick ; by which means as the Keys will not come up until the next Spring after sowing, you will have the Benefit of a Crop of Barley the first Year. Early in the Spring following give the Land a thin hoeing, which will loosen and mellow the Earth, so that the tender Plumes or Shoots may with ease rise thorough the same.

When the young Seedlings have risen high enough to stand the Hoe, than hoe them out, leaving but one promising Plant at three, four, or five Feet distance from one another ; the oftner the Seedlings have the Earth stir'd about them with hoeing, the better they will thrive. In the Beginning, of the following Winter the Surface of the Ground shou'd be lightly dug about half a Spit deep, that the tender Fibres may easily strike therein, and afterwards hoe them in the Spring when the Weeds begin to rise ; and thus continue to do, until the Shade of the Nursery shall prevent their farther Growth, which will be in three or four Years time.

There is another way of planting young Trees which has been practis'd with Success in several Places

ces at a small Expence, and may be apply'd to the raising of Hop-Poles, which is this. Chuse a Piece of Ley-Ground of a Proper Soil, and well shelter'd on all Sides, especially the *West*; and lay it out in Ridges as for *Potatoes*, making Trenches a Foot and half wide, and two or three Spit deep: when you have laid the upper Sod on one side of the Trench, the Grass-side downwards, break the Mould of it fine, and throw a little more fine Earth from the Trench upon it; then take a young *Asb* from about ten to fifteen Inches long, having before lopt off the Head to that Length, and lay it on the fine Earth, the Roots lying inwards, as is in laying Quicks; then cover it with fine Mould taken from the Trench three or four Inches thick, but leave about two Inches of the Top of the Plant uncover'd on the side of the Trench. At two or three Feet Distance plant another *Asb* in the same manner, and so on till you have done the whole Field. When you have laid the fresh Mould on the Roots, then cut the Grass-Sods which lie between each Plant, and lay them over the fine Mould upon the Plant, by which means the Plants will have small Hillocks of good Mould about them, sufficient to save them from drying Winds and the Heat of the Sun. Let the Ridges be six or seven Feet over, so you will have the Trees at two or three Feet a sunder in the Row, and each Row six or seven Feet distant from one another; by which Means all the Trees will have sufficient Air and Room to spread their Roots, and may be very easily hoed or weeded. In planting Trees after this manner, you dig but about a fourth of the Ground; but for several Years after, and until the Trees are grown up large and spreading, you may make use of half the Ridge, either for *Potatoes* or any other Fruit or Grain.

It is recommended as very material to the Growth of Trees in this manner, that the Trenches be made
from

from the *South-West* to the *North-East*, so that all the young Trees will lie facing the *South-East*, by which means they will have the Benefit of the Sun, and not be exposed to the *West* or *North-West* Winds, which check and stunt all young Trees that lie expos'd to them.

Elms, *Beech*, and many other Trees may be rais'd in great plenty, by planting in fine Mould the small Shoots of the Branches of the last Year's Growth, after you have split them off from the larger Branches. One large Tree will furnish a great Number of such Shoots, which ought to be set in *February* with their Tops on, and water'd in the Spring: such Plants seldom fail, and supply a Stock of Trees much sooner than can be done from Stools, Layers or Seeds.

Some advise the sowing of *Chestnut*, *Acorns* and *Hazel-nuts*, with *Ash*-Keys, which Nuts should be kept in moist Sand from the time of their gathering to the Season for sowing, or otherwise they will shrivel and perish. The sowing of these sorts together is recommended for this Reason, that some of them strike their Roots deeper than others, and consequently are not like to rob one another of their due Nourishment as much as if they had been all of one Kind.

Chestnuts make admirable Poles, and shou'd be sown in deep Drills, and manag'd afterwards as the *Ash*.

At nine or ten Years Growth, *Ash* may be cut for Poles, and after the first cutting, each Stock will throw out four or five good Shoots at least, which will be fit for Poles in 7 or 8 Years after.

The Season of the Year for cutting *Ashen* Poles is about the Middle of *December*, when their Sap is most condens'd by the Winter's Cold; and in the Spring following they will shoot up again with Vigour, but take care to cut them off sloping about six Inches above Ground. Some recommend that the Face of their Cuts be towards the *South*, that the Sun may
the

the sooner heal their Wounds, by drawing up the natural Juices to the face of the Cut, and drying them there, whereby they will be less subject to soak Wet. But others are afraid, that if the Cuts lie towards the *South*, they will be more liable to crack, open, and soak Rain : But Experience must determine which Way is best.

There is one Caution to be constantly observ'd in all Plantations of young Trees, that they be so well fenc'd and guarded, that no Cattle at any time be suffer'd to brouze upon them, which they will not fail to do, if they can get into them ; for if the leading Shoots be bit off, there is an end of that Growth, and you must cut down all such Trees as have been thus cropp'd within six Inches of the Ground.

An *Irish* Acre of Hop-Ground will at the first planting require 3300 Poles, if the Hills be 8 Feet distant from one another; 4320 Poles if 7 Feet distant, and 5880 if but 6 Feet distant ; the Distances being computed from the Center of one Hill to the Center of another. To recruit, and keep an Acre of Hop-ground in constant Repair, will require about 700 Poles yearly. One Acre of Ground planted as above mention'd, with *Ash*, *Alder*, or *Poplar*, &c. will be sufficient at the first cutting down to stock at least an Acre of new Hop-Ground with Poles, or recruit four Acres, and at the second cutting down will supply 3 or 4 times that Number of Acres with Poles.

The providing of Poles makes about a third part of the yearly Expence of a Hop-Ground in *England*, where Poles are sold at a reasonable Price ; but a Quantity of good large Poles, such as those of 20 Feet long, and 9 or 10 Inches in the round at bottom, cannot now be bought in *Ireland* for 20, 30, or even 40 s. the Hundred ; yet if the Hop-Planter will himself raise Coppices of them, as herein mention'd, they will not stand him in ten Shillings the Hundred, and

perhaps not five Shillings; which will lessen a great part of the Charge in the Management of his Hop-Ground.

This farther Advantage will arise from Plantations for Poles, that they will supply Wood for many other Uses in Husbandry, and put us in the way of raising Timber-Trees, which are so much wanted in this Country.

HAVING thus given all the *Instructions* which are necessary in the Culture of Hops, from the first preparing and planting the Ground to the bagging and fitting them for Sale, and for raising Poles; nothing more need be said, but to observe that Gentlemen and Farmers have the greatest Encouragement that can be desir'd, to set about the planting of Hops, if we consider the Goodness of our Soil, the Temperature of our Air, the cheap Labour of our People, the Easiness of getting Sets and raising Poles; and that the Skill requir'd in the Management of Hops may be soon learn'd from the *INSTRUCTIONS*; and above all, if we consider the great Profit which the Hop-Planter may expect from his Plantations, by far greater than can be got in any other Part of Husbandry: Can there be greater Encouragement than to receive 60 *l.* for the Hops of one *Irish* Acre in a Year? Yet this is no more than what may reasonably be expected one Year with another, considering that there is always a great and constant Demand, and a greater Price paid for Hops in *Ireland* than in any other part of the World. We have Instances of some among us, who have got 130 *l.* for the Hops of one Acre in a Year, tho' but indifferently managed; which is as much as would purchase the Fee-Simple of 13 Acres, supposing the Land to be worth 10 Shillings *per* Acre yearly, and to be sold at 20 Years Purchase.

Private

Private Profit and Interest influence more than any other Consideration ; we shall find in the Business of Hops the greatest Prospect to expect and obtain it, because every Article of the Management may be perform'd with less Expence in this, than in any other Country ; and at the same time the Produce will yield a higher Rate and Profit here, than any where else. I make no doubt but that in time we shall see some among us make Thousands a Year by this Part of Husbandry, as is done in *England* ; but whatever may be the Profit in Process of Time, when Plantations of Hops shall be greatly increased among us, (which yet will be more for the Benefit of the Kingdom) though the Gain to particular Hop-Planters may be lessen'd thereby ; yet it cannot be doubted but that the first Planters will be the great Gainers, since they will come to a Market which will not be over-stock'd in their own Time, and where Hops will not fail to sell at a good Price.

Fig. 4.

The Back-
Part.The Side of the Steddle or
Lanthorn.The Furnace or
Mouth of the
Steddle.

F I N I S.



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